Institute Laboratory Assessment
Interim Review

Advanced Meson Science Laboratory

MASAHIKO IWASAKI

The Chief Scientist

February 26, 2010

RIKEN Nishina Center
for Accelerator-Based Science

Index

1. Reviewers List 1
2. Review Program 2
3. Review Materials 3
3.1. Introductory Remarks and Acknowledgements 3
3.2.1. Hadron Physics 6
3.2.2. Muon Science 27
3.2.3. Mössbauer spectroscopy 44
3.3. Record of Members 49
3.4. Record of Fundings 52
3.5.1. Original papers 53
3.5.2. Publication in Japanese 99
3.5.3. Oral Presentation (International Conference) 100
3.5.4. Oral Presentation (in Japanese) 124
3.6. Future Plan 145
3.7. Curriculum Vitae (Chief Scientist) 146

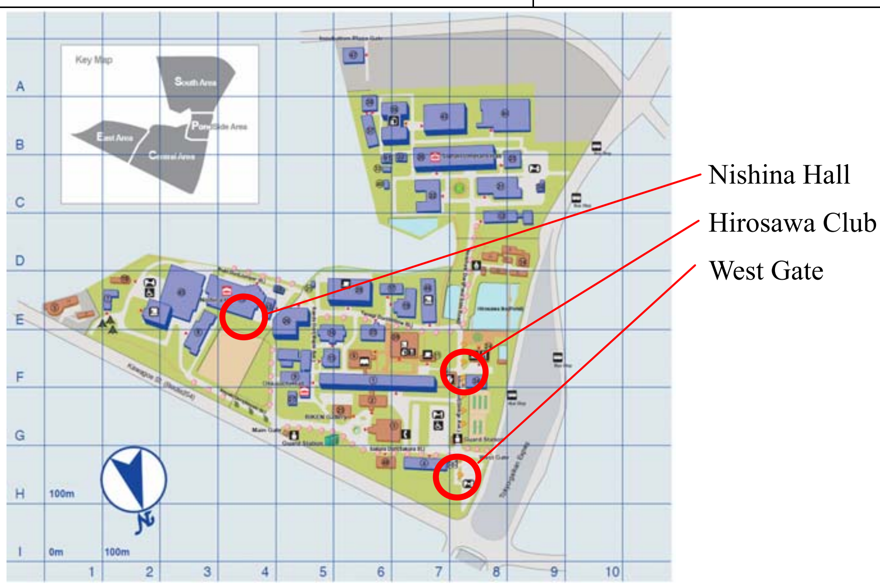
1. Reviewers List

Name	Affiliation
Tadafumi Kishimoto	Director, Research Center for Nuclear Physics, Osaka University, Japan
Tomofumi Nagae	Professor, Graduate School of Science, Kyoto University, Japan
Kusuo Nishiyama	Honorary Professor, Institute of Materials Structure Science KEK, Japan
Robert F. Kiefl	Professor, Department of Physics and Astronomy, University of British Columbia, Canada
Jean-Michel Poutissou	Associate Director, TRIUMF, Canada

2. Review Program

Laboratory	Advanced Meson Science Laboratory (Chief Scientist: Masahiko Iwasaki)
Date	February 26th 2010, 9:30～17:00
Venue	RIKEN Wako Institute

Time	Content	Other details
09：30～10：00	Introduction to RIKEN (Dr. En'yo, the Director of Nishina Center for Accelerator-Based Science)	Wako Campus Nishina Hall
10：00～11：30	Presentation by the Chief Scientist	Wako Campus Nishina Hall
11：30～12：10	Question and Answer	
12：10～13：00	Lunch (Reviewers only)	Wako Campus
13：00～14：00	Discussion by the review members with the Chief Scientist and RNC Director, Executive Directors	Wako Campus Nishina Hall
14：00～14：50	Interview by the reviewer with the laboratory staffs	Wako Campus Nishina Hall
14：50～15：00	Coffee Break	Wako Campus Nishina Hall
15：00～16：40	Closed discussion by the reviewers	
16：40～17：00	General briefing to the RNC Director, Board of Chief Scientist Assembly	
17：30～	Dinner hosted by Dr. En'yo	



RIKEN Wako Campus

3. Review Materials

3.1. Introductory Remarks and Acknowledgements

Advanced Meson Science Laboratory is presently belonging to RIKEN Nishina Center for Accelerator-Based Science (RNC). We have two major research subjects. One is the study of meson – nucleon / nucleus interaction for fundamental hadron physics using mesons as a probe. The other is muon science for more generic study using muons, covering wide area such as condensed matter physics with μSR and nuclear-atomic related study on μCF. We have also several accelerator-related studies, such as Mössbauer study as a part of the condensed matter physics.

As described above, we are covering wide area of accelerator-based studies. The diversity of research fields is originated from the establishment of our laboratory. Our laboratory started as Moun Science Laboratory, initiated by former chief scientist Kanetada (Ken) Nagamine, who established RIKEN-RAL pulsed-muon facility at Rutherford Appleton Laboratory (UK) back to 1990. This institution-based international cooperation to the experimental facility, including its construction and operation beyond the national boundary, is quite unique. The facility, named as RIKEN-RAL Branch (RRB), is operated as a research center of muon science, which is open to public through experimental proposals. The experimental program advisory committees (PAC) are funded both in Japan (hosted by RIKEN) and in UK (by RAL) sharing the beam time of this facility. Since then, this activity is taken as one of remarkable success to both Japan and UK.

In 2002, at the initial period of the second term of Japan-UK research contract (10 years from 2000), Masahiko Iwasaki was assigned to be a chief scientist of this laboratory, succeeding in the RRB operation mission after Nagamine's retirement from RIKEN. On the other hand, a new-generation pulsed-muon facility (MUSE) construction was approved as one of the important components of a J-PARC accelerator complex (Tokai, Japan), and KEK muon group was assigned as the construction team. This gave us a a strong motivation to extend, enrich and deepen our research field to new direction, without limiting ourselves only to the RRB operation. Meanwhile, our group was requested to maintain and enhance our activity at RAL from the Japan muon / meson science community. Thus we motivated ourselves that the muon science activity at RIKEN-RAL remain one of the main subjects of this laboratory, not only by a mission.

When Iwasaki was appointed as a chief scientist, he was also requested from RIKEN to open new research program initiated by himself. In RIKEN, there were two other large-scale physics programs. One is new radioisotope beam factory (RIBF) covering low energy nuclear physics focusing on element genesis. At that time, four chief scientists were already committed to the RIBF project. The other is the spin physics using RHIC at BNL (RBRC) covering very high-energy nuclear physics focusing on origins of proton spin, property of QGP phase, and theoretical researches related to RBRC. The RBRC has been operated under a representative chief scientist, Hideto En'yo. Thus, it is required to select a subject orthogonal to RIBF and/or RBRC related ones.

Before the appointment, Iwasaki already initiated and conducted successfully several hadron experiments at the KEK 12 GeV proton synchrotron (PS). Thus, it was natural to choose high-energy nuclear (hadron) physics as an expansion of the laboratory's identity, focusing on strangeness-related hadron physics as a new research field for our laboratory. In this framework, it is to be underlined that we succeded to attract researchers coming from all over the world, forming international collaborations, with the RIKEN group having leading role. We are, as well, actively participating to international collaborations in other laboratories, such as KEK, GSI and LNF-INFN. Our laboratory has gained an international dimension in both directions: attracting scientists in Japan, and allowing Japanese scientists to take part to experiments performed elsewhere. Presently we are preparing several new experiments using exotic beams of kaon or anti-proton to study the meson property in nuclei at J-PARC hadron hall. To study pion-nuclear interaction or pion property in nuclear media, RIBF is another ideal place, where we are also preparing new high-resolution experiment. Another important activity, this laboratory has, is forming new scientists: we have followed many young students in their Master and Ph. D. theses, with excellent outcome on both sides.

When RNC was established in 2006, the former director, Yasushige Yano, invited all the accelerator-based researchers to be a member of the new Center, defining its mission to endorse and promote all the accelerator-based researches without limiting only to RIBF. Under this spirit, "Nishina Center for Accelerator-Based Science" is named to represent our activities and ourselves. As a result, RNC's mission is full of diversity of researches at RIBF, RBRC, RRB, J-PARC, and more.

Let us briefly describe the future direction of our laboratory. As a part of internal discussions of the institutional based conceptual panning of RNC, where we belong to, we are proposing two outstanding projects. One is hadron physics project to explore the "origin of the hadron (matter) mass", which requires substantial RNC's institutional-based contribution to J-PARC Hadron hall. To realize the project we have been discussing with Radiation laboratory of RNC. The other is the muon science project to realize new muon anomalous magnetic moment (g-2) measurement to confirm the physics beyond standard model, using ultra-cold muon source what we have developing at RIKEN-RAL. To realize the ultra-cold muon source, we have been collaborating with KEK and TRIUMF.

This article covers the scientific achievements of Advanced Meson Science Laboratory from 2002, when Masahiko Iwasaki was appointed as a chief scientist, to present. He wishes to address his gratitude to all the contributions to prepare this article by all the members of Advanced Meson Science Laboratory, including who have left the laboratory. Special thanks should be given to Kanetada Nagamine the former chief scientist, Hideto Eny'o the director of the RNC, and former director Yasushige Yano. He is also grateful to his research colleagues in RIKEN and RAL, as well as other collaborating institutions over the

world including students for their continuous and extensive research works. All the helps and encouragements from administrative staffs in RIKEN, from the top executives to the secretaries of the laboratory, are sincerely appreciated. Admixture of those contributions to the chief scientist and Advanced Meson Science Laboratory makes these 8 years to be fully fruitful and enjoyable.

February 8th, 2010

Masahiko Iwasaki

3.2. Research Topics

3.2.1. Hadron Physics

Property of particles in matter / media attracts interest in many ways. It is believed that the property of particles is not independent from the surroundings through the interaction between the two. Present scenario "how the mass of the basic (elementary) particle is formed" is based on the idea that the vacuum is also a kind of matter where many interesting processes are taking place, as for example the higgs condensate. This condensation is believed to have been realized during the cooling down of the universe at around $T \sim 100\ \mathrm{GeV}$ after the Big Bang. Therefore, to detect higgs is one of the major goals of the LHC project at CERN.

To explain the origin of the mass of the hadrons, however, this higgs mechanism is not sufficient to account for the so called constituent quark mass $m_q \sim 300\ \mathrm{MeV}/c^2$ and the baryon formation. To explain that, one needs another phase transition of the vacuum called quark-antiquark pair condensation at around $T \sim 200\ \mathrm{MeV}$. Thus, the vacuum expectation value of $\langle \bar{q}q \rangle$ is non-zero due to the spontaneous chiral symmetry breaking of the vacuum, and this $\langle \bar{q}q \rangle$- condensation is the major source of masses of low lying hadrons such as protons, neutrons, pions, etc, and, consequently of the matter and…of ourselves.

The present scenario of the mass formation of the particles depends on how particles interact with surrounding space where higgs and quark-antiquark pairs are condensed. Thus, in the hadron sector, the in-medium particle properties are fundamentally related to the chiral symmetry breaking mechanism. The $\langle \bar{q}q \rangle$ expectation value (chiral order parameter) is a function of temperature and chemical potential (density). Therefore, there is currently great experimental interest to study the effect of chiral symmetry breaking and its partial restoration in the nuclear media.

In a nucleus, it is known that mesons, especially pions, play important role to bind nucleons. The existence of the mesons was originally predicted by Yukawa as bosons, which form the nuclear field as a solution of the Klein-Goldon equation of the zero total energy, naamely $\left(\sim \exp(-m_\pi r)/r\right)$. In the standard model, the basic gauge particles of the strong interaction were replaced by gluons, but gluons cannot propagate directly between two nucleons in a nucleus due to the confinement nature, so the meson field approach is still valid in the phenomenological way to represent the nuclear interaction. In this manner, nuclei consist of nucleons and virtual meson fields. Naturally, nuclei are expected to be strongly absorptive space for mesons such as to form stable bound states in it. Therefore, experimental search for these states were untouched for long time. However, it is quite interesting subject how mesons behave and how their properties may change in the nuclear media.

Triggered by the series of recent experimental studies of the mesonic atom, the importance of the experimental search for the mesonic nuclear bound states was shed into new light. Thus, the extensive experimental studies were started only very recently. It is still controversial whether there exist deeply-bound mesonic states further below atomic states (in other word, whether one can detect them experimentally) inside the nuclei. It is to be underlined that this type of studies are having an importance which extends from particle physics to the astrophyssics, since part of the processes undergoing into the (neutron) stars might be explained by these type of processes and can only be studied by this approach.

Therefore, we have been approaching this difficult questions using various machines. In this interim period, we performed experiments at KEK 12 GeV-PS, GSI, DAFNE (LNF-INFN) and preparing several experiments at 50 GeV-PS of the J-PARC facility.

3.2.1.1. Individual topics of Hadron Physics

Kaonic Atoms

Let us first overview the recent studies of the $\bar{K}N$ interaction by the x-ray measurement of the kaonic atoms. The $\bar{K}N$ interaction can be studied by the level shifts and widths of the kaonic atom x rays, and one can study the chiral symmetry in nuclei and give constraints on chiral perturbation theory as it is the case in the pionic atom study. However, present kaonic atomic data are still insufficient for the understanding of the $\bar{K}N$ interaction in detail.

In general, if the interaction is attractive, the effect of the strong interaction to the atomic level is much more complicated compared to the repulsive case. To demonstrate the situation, simple calculation result of the level shift of the kaonic hydrogen atom is plotted in Fig. 1, as a function of the real part of the potential between kaon and proton. The s-wave atomic levels are calculated by solving the Schrödinger equation in a Coulomb field and Yukawa potential as a local part, $(V+iW)\exp(-r/\lambda)/r$, where λ is the range parameter to be 1 fm for the simplicity, and V and W are the constants representing real and imaginary part of the local part. As shown in the figure, the atomic level shifts have beat pattern when the attractive force is strong enough compared to the imaginary part. It can be understood as interference between nuclear pole and atomic one. At the node, a bound state to the local potential is formed as a nuclear state, and the atomic level shift changes its sign and moves upward for more attractive interaction. This upward shift is not the result of the repulsion. The atomic ground state change its nature to the nuclear (local) one, and the wave function confined in a local potential beyond the node. After our previous work on kaonic hydrogen atom [1], $\bar{K}N$ interaction

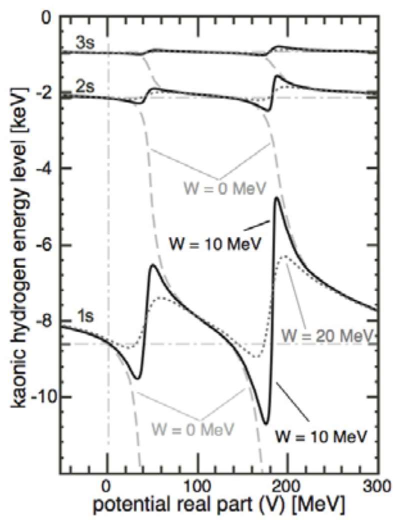


Fig. 1 A diagram of the level shift of the s-wave kaonic-hydrogen atom as a function of real part of the local potential. Three curves of the imaginary part, W = 0 (dashed), 10 (solid) and 20 (dotted line), are plotted.

was confirmed to be strongly attractive.

There is another problem called “kaonic helium puzzle”. Calculated shift of the kaonic helium 2p level should be almost zero (well below 1 eV) while three data points are consistent and having an average value as large as ~ 40 eV (upward). In the x-ray spectra, kaonic helium x-rays were clearly observed. Therefore, a possibility of existence of the deeply bound kaonic states in nuclei is discussed by Wycech as early as 1986 [2], based on the kaonic ^{4}He atom data. This prediction triggers a new precision x-ray experiment of the kaonic helium atom at KEK, KEK PS-E570. We observed the kaonic helium x-ray transition very clearly with good resolution, which is achieved by using SDD as x-ray detectors. An x-ray spectrum is shown in Fig. 2. In the spectrum, the Ti and Ni fluorescence x-ray peaks were recorded simultaneously using the self-trigger mode of the SDD signal, and used as in-situ absolute energy-calibration sources to reduce the systematic error. As a result, the shift was consistent to be zero,

$$-\Delta E_{2p} = -\left(E_{obs}^{3d\to 2p} - E_{EM}^{3d\to 2p}\right) = -2 \pm 2(\text{stat.}) \pm 2(\text{syst.}) \ \text{eV}.$$

So the “kaonic helium puzzle” was resolved.

Unfortunately, the atomic shift is sensitive only when the pole position due to the strong interaction is quite close to the atomic one. Thus, to explore the interaction inside the nucleus, one needs a systematic study. To have more direct information, we are presently preparing new experiment, J-PARC E17, using ^{3}He as a target.

We have as well had an active role in experiments on kaonic atoms performed at the DAFNE accelerator at Frascati, being paer of the DEAR and SIDDHARTA Collaboration. As such, we performed measurements on kaonic nitrogen, kaonic hydrogen and kaonic helium [4-7]. Presently, we are actively participating to the upgrade of the SIDDHARTA experiments, towards measuring more exotic atoms (kaonic deuterium and heavier targets).

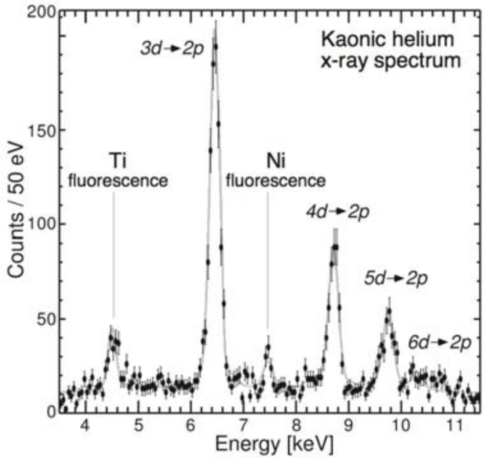


Fig. 2. An x-ray spectrum obtained by the most recent KEK experiment KEK PS-E570.

References

[1]. M. Iwasaki et al: Phys. Rev. Lett. 78. 3067 (1997).

[2]. S. Wycech: Nucl. Phys. A 450, 399C-402C (1986).

[3]. S. Okada et al: Phys. Lett. B 653, 38 (2007).

[4] G. Beer et al: Phys. Lett. B 535, 52 (2002).

[5] T. Iwhiwatari et al: Phys. Lett. B593 48 (2002).

[6] G. Beer et al: Phys. Rev. Lett. 94 (2005) 212302.

[7] M. Bazzi et al: Phys. Lett. B681, 319 (2009).

Pionic Atoms / Pions in Nuclei

We have made precision spectroscopy of pionic lead and tin atoms, and extracted information on the in-medium interaction between pion and nucleus, which leads to the exclusive quantitative evaluation of the chiral symmetry restoration in the nuclear matter [1]. Our collaboration, which mainly consists of the RIKEN and the University of Tokyo group, conducted the experiments starting from R&D to the precision spectroscopy. The expeirment was carried out in GSI, Darmstadt, utilizing (d, ^{3}He) pion transfer reaction at the zero-momentum transfer kinematics to enhance pionic atom formation cross section.

Our first discovery was pionic 2p state in the lead 207 nucleus [2], where the negative pion is accomodated in a delicate balance between the Coulomb attraction and the strong repulsion. The pion is almost touching the nuclear surface, and in the past studies, such a deeply bound pionic state is regarded as too short-lived for observation as a distinct peak. Following the discovery, we have performed experiments to measure *1s* pionic lead 205 [3] and tin 115, 119, and 123 isotopes [1] as shown in Figure 1 for the case of pionic tin isotopes.

We have analyzed the experimental spectra elaborately and extracted in-medium isovector interaction between pion and nucleus. In combination with experimental information on the pionic hydrogen and deuterium, which gives the interaction strength in vacuum, we have evaluted the in-medium interaction modification. The modification is originating in the partial restoration of the chiral symmetry in the nucleus, and we have quantitative result for the first time concluding the chiral order parameter reduction in the nuclear matter to be 33 %, which is consistent with the theoretical prediction of 30 % as shown in Figure.1.

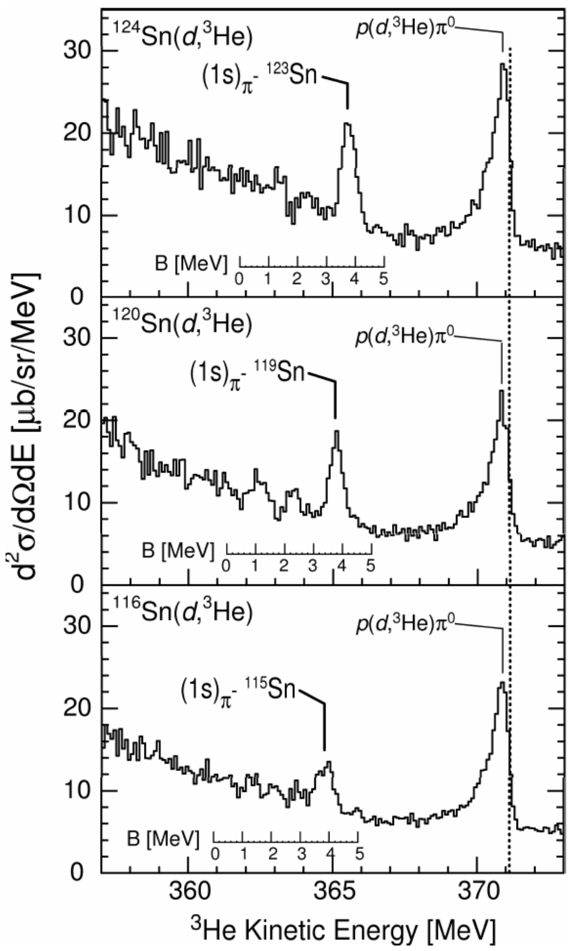


Figure 1 : Experimental spectra of pioinic tin isotopes [1].

With respect to the approach to the understanding of the chiral symmetry, one of the merits of pionic atom spectroscopy superior to others is its small ambiguity. Since pionic atom is a meta-stable quantum state, the ambiguities in the measurement are minimized in principle in contrast to many experiments where in-medium mesons are in motion.

Presently, we have been preparing for a sophisticated experimenal setup of the pionic atom spectroscopy at the RIBF in the RIKEN. We expect about twice better experimental resolution with much smaller systematic erros [4]

References

[1]. K. Suzuki *et al.*, Phys. Rev. Lett. **92** 072302 (2004).

[2]. T. Yamazaki *et al.*, Z. Phys. A355 219-221 (1996).

[3]. H. Geissel *et al.*, Phys. Rev. Lett. **88** 122301 (2002).

[4]. K. Itahashi *et al.*, RIBF-027 proposal ``Precision spectroscopyof pionic atoms in (d,3He) nuclear reactions." (2007).

Λ in nuclei

We have been extensively studying non-mesonic weak decay(NMWD) of Λ hypernuclei(Λ+N → N+N). This NMWD is the very unique strangeness-changing baryon-baryon weak interaction process, which can occur only in nuclei. Concerning the ratio of two possible NMWD modes, Γn/Γp ≡ Γ(Λ+n→n+n)/ Γ(Λ+p→n+p), theoretical calculation based one one-pion exchange model predicts Γn<<Γp, whereas recent experiments for A=5,12 suggests large ratios close to unity. However these reported results have large errors of 30～100%. Up to now, most of the experiments concerning this ratio measured only protons from Λp → n p process and Γn was determined by the subtraction of all the other decay processes. Thus the obtained results must be much affected by small changes of the assumptions on final state interaction(FSI) effect and by the possible existence of the two-nucleon induced NMWD process, ΛNN→NNN.

In order to measure this ratio unambiguously, we choose light s-shell Λ hypernuclei, $^{5}_{\Lambda}$He, so as to minimize the FSI effect in E462 experiment. In addition, we measured both of n+p- or n+n-pairs emitted from Λ+p→n+p or Λ+n→n+n NMWD process. When we select two-nucleon pairs which has back-to-back angular correlation, we can measure Γn/Γp ratio directly only from the ratio of n+p- to n+n-double coincidence pair numbers. The result of this measurement is free from the strength of FSI effect and also from the possible ΛNN→NNN contribution. The experiment was extended to the heavier p-shell nuclear target, ^{12}C, to study the mass-number dependence in E508.

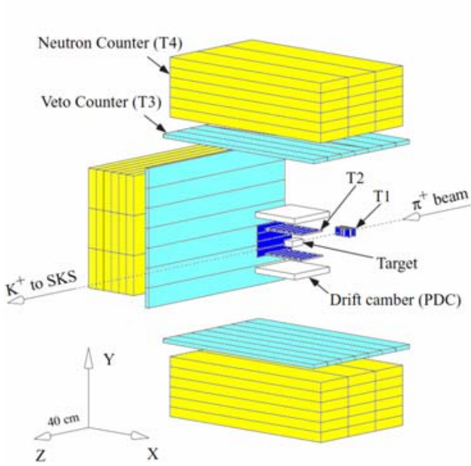


Fig.1 Experimental setup of KEK-PS E462/E508. Hypernuclei are produced by (π^+,K+) reaction on the target, Decay counter system is sensitive to all the decay particles from the major decay modes of Λhypernuclei, neutron/ π^0/ $\pi^{\pm}$ /protons. Also we can measure two decay particles in coincidence.

Fig. 1 shows the setup of the decay coincidence system in E462/E508. Coincidence arms are sensitive to the all the particles emitted from the major decay modes of Λ hypernuclei. The top and bottom coincidence arms are placed to maximize the acceptance for the back-to-back n+n and n+p pairs.

Fig. 2 shows the angular correlation of the n+p- and n+n-pairs from the NMWD of ${}^{5}_{\Lambda}$He (double coincidence acceptance is corrected). In both of n+p/n+n, we observed clear back-to-back correlation. Also the sum energy distributions of two nucleons show peak at the Q-value of NMWD.

From the back-to-back coincidence ratio, we obtained the ratio of two-nucleon coincidence, Nnn/Nnp as

Nnn/Nnp = 0.45 ± 0.11 ± 0.04 (for ${}^{5}_{\Lambda}$He) [1]

with condition of cos θ_{NN}<-0.8 and T_N>30 MeV.

The same ratio was successfully measured also in E508 experiment as

Nnn/Nnp = 0.51 ± 0.13 ± 0.05 (for ${}^{12}_{\Lambda}$C) [2].

Recent theoretical calculation considering heavier meson and/or direct quark exchange mechanism predicts the Γn/Γp ratio close to the measured ratio. Both of the dominance of Λ+p→n+p decay process and the significant contribution of Λ+n→n+n process are established for the first time.

In the recent detailed analysis for the ${}^{12}_{\Lambda}$C decay, we found that not only the back-to-back two-nucleon emission yield but also the single nucleon spectra (both protons and neutrons) are quite successfully reproduced when we assume 29±13% contribution of ΛNN→NNN decay in all the NMWD [3].

In the J-PARC experiment we are planning to carry out two Λ hypernuclear weak decay experiments with SKS at K1.8 beam line: (1) precise measurement of Γn/Γp ratio for ${}^{4}_{\Lambda}$He (E22) and (2) high-statistics and low-proton detection threshold measurement of the NMWD of ${}^{12}_{\Lambda}$C (E18) so as to study the detail of two-nucleon induced NMWD (ΛNN→NNN).

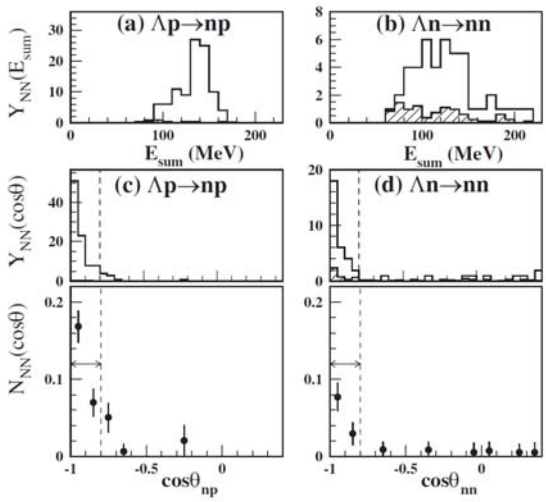


Fig.2 Two-nucleon angular correlation(top) and energy sum(bottom) from the NWMD of ${}^{5}_{\Lambda}$He n+p(left) and n+n(right)

(a)/(b): the sum energy of n+p and n+n, respectively

(c)/(d):show the opening angle plots for n+p/n+n-pairs

(top) bare number plot

(bottom) acceptance corrected, normalized by NMWD

References

[1]. B.H. Kang et al.: Phys. Rev. Lett. 96, 062301 (2006).

[2]. M. Kim et al.: Phys. Lett. 641 28-33 (2006).

[3]. M. Kim et al: Phys. Rev. Lett. 103, 182502 (2009).

Kaons in Nuclei

We have performed experimetal exploration of theoretically predicted deeply bound kaonic nuclear states in ^{3}He nucleus. Akaishi and Yamazaki first calculated large binding energy and narrow width for the total isospin T=0 component (K^-ppn) to be 108 MeV and 20 MeV (FWHM), respectively, reflecting rather strong attraction in the isospin I=0 (K^-p and $\bar{K}^0 n$) channel [1]. The estimation was based on the information of kaonic hydrogen atom level shifts [2,3], low energy kaon scattering data, and assumption that Λ(1405) should be a $\bar{K}N$ bound state.

One of the most interesting features of the kaonic nucleus is that the strong attraction of the kaon contract the surrounding nucleons, which implies extremely high density (several times larger than normal nuclear density) matter formation. Measurement of the kaon properties at such high energy density will provide precious information on the origin of hadron masses, the chiral symmetry breaking and its partial restoration.

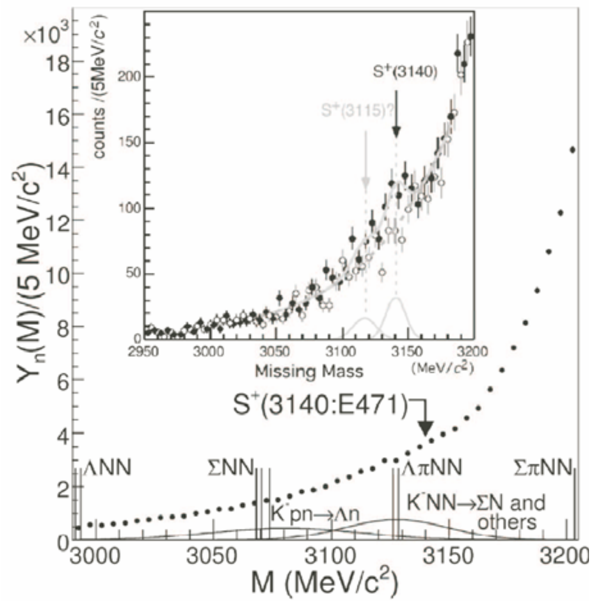


Figure 1 : Mass spectrum of the reaction product in (stopped K$^-$,n) reaction.

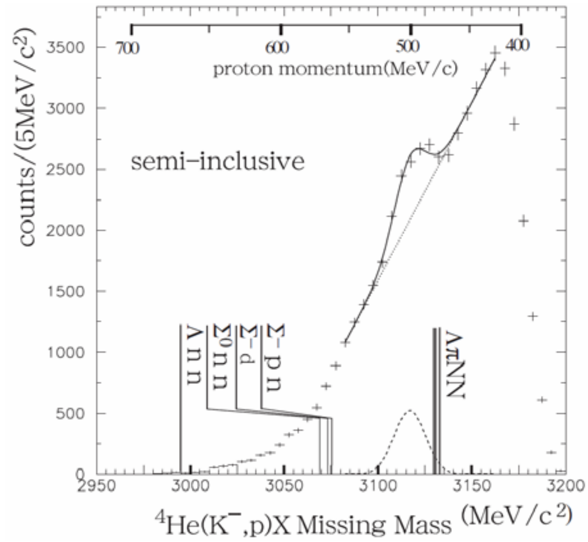
The experimental principle adopted uses stopped K^- on suprefluid helium target, and we focus on emitted neutron momentum measurement by the time-of-flight (TOF) method. The last orbit of kaonic ^{4}He atom is 2p and the branching ratio from the last orbit to the nuclear kaon bound state accompanied with a neutron emission was estimated to be 1 % at minimum.

The exploration was performed from 2002/ Sept. till 2005/Dec. as series of experiments at the KEK-PS (E471, E549, E570) with (almost) common experimental setup. An important modification to be noted is the installation of equipments dedicated to the emitted proton TOF and trajectory measurement for the detection of the kaonic nucleus with T=1 state (K^-pnn) in the latter stage (E549 and E570) of the series.Thus obtained experimental spectra are summarized in Figure 1 and Figure 2 for the neutron [4,5] and the proton [6,7], respectively.

Let us start with the neutron spectra. Figure 1 shows recently updated results of E549. The abscissa is the mass of the reaction product M shown with thresholds for possible decay channels. The statistical error bars are shown but are to small to be seen. The inset shows results in the previous experient E471. Here, we do not discuss their consistensy but we were able to conclude that the small structure seen in the inset, E471, near M = 3140 MeV/c^2 should be due to statistical fluctuations. The spectral shape is rather smooth and elaborate analysis shows uppper limit of the kaonic nucleus formation.

Let us set our sight to the proton spectra. Figure 2 shows results of E549 and E471. We recognize their large inconsistency. Even if the experimental conditions adopted are not equal, the above difference is now considered to be a consenquense of erroneous time-walk correction (time vs. pulse height correlation) included in the early experiment E471, and the peak structure seen near $M \sim 3115$ MeV/c^2 is an artifact. Again, upper limit is given for the kaonic nucleus ($K^- pnn$) formation.

After the completion of above series of experiments, the KEK-PS was shut down to switch to a new facility J-PARC. Presently, we are preparing for an experiment to search for $K^- pp$ nuclear system at the K1.8BR beamline of the J-PARC [8]. With the same setup, we are as well planning to perform dedicated studies of the Λ(1405) formation and decay processes, since this state became the cornerstone of the prediction of the possible existence of the deeply bound kaonic nuclei.



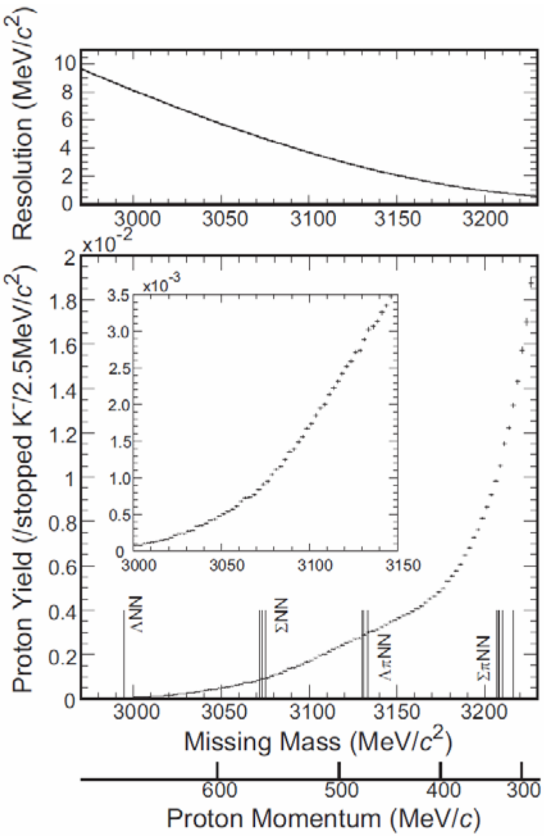


Figure 2 : Mass spectra of the reaction product in (stopped K^-,n) reaction for E471 (left) and E549 (right).

References

[1]. Y. Akaishi and T. Yamazaki, Phys. Rev. C **65** 044005.

[2]. M. Iwasaki *et al.*, Phys. Rev. Lett. **78**, 3067 (1997).

[3]. T.M. Itoh *et al.*, Phys. Rev. C **58**, 2366 (1998).

[4]. M. Iwasaki *et al.*, nucl-ex/0310018 (2003).

[5]. H. Yim *et al.*, *in printing* in Phys. Lett. B (2010).

[6]. T. Suzuki *et al.*, Phys. Lett. B **597** 263--269 (2004).

[7]. M. Sato *et al.*, Phys. Lett. B **659** 107--112 (2008).

[8]. M. Iwasaki, T. Nagae *et al.*, J-PARC proposal P15
``A search for deeply-bound kaonic nuclear statesby in-flight 3He(K-,n) reaction'' (2005).

Double-Kaons in Nuclei

Possible existence of anti-kaonic nuclear clusters has been investigated extensively both with theoretical and experimental approaches recently. In view of the strongly attractive $\overline{K}N$ interaction below threshold, the existence of nuclear clusters with more than one K^- is predicted also, such as $\overline{K}\overline{K}NN$ double anti-kaonic nuclear systems[1]. Double anti-kaonic nuclear clusters are predicted to have binding energies up to 300 MeV and nuclear densities exceeding ∼ 10 times that of the average one ρ (0)= 0.17 fm^3, thus producing conditions in the phase diagram of hadronic matter for which phase transitions to Kaon-condensation / color-superconductivity or pre-cursor effects for these may be reached at low temperature.

We propose [2] to produce double K^- simultaneously at close distance in a nuclear target and explore the expected ``strong attraction'' mediated by double anti-kaons in the nuclear environment, leading to cold and dense Fermion matter.

The elementary anti-proton annihilation reaction, which produces the two pairs of (K^+ K^-), considered is

$$\bar{p} + p \rightarrow K^+ + K^+ + K^- + K^- - 98 \text{ MeV}, \quad (1)$$

with a negative *Q*-value of 98 MeV, so forbidden for stopped antiprotons. However, if multi kaonic nuclear cluster exists with deep bound energy, as suggested by Ref.[1], the following $\bar{p}p$ annihilation reactions will be possible on He targets[2]:

$$\bar{p} + {}^3\text{He} \rightarrow K^+ + K^0 + ppK^-K^- + B^{pp}_{KK} - 109 \text{ MeV}. \quad (2)$$

This double kaonic nuclear cluster process occurs if the binding energy of the two K^- in a ppK-K- cluster B^{pp}_{KK} exceeds 109 MeV.

For reactions in the final state (2), we have no exclusive signal for the production of a S = -2 system, thus we can resort to the detection of the decay of the cluster X into two S = -1 hyperons, such as two Λ particles. So we can measure the missing mass from the K^+K^0 energies and also the decay products in addition to reconstruct the invariant mass of the double kaonic nuclear cluster. Moreover, all particles in the final state can be charged, if the ppK^-K^- intermediate state will decay to ΛΛ, so we can detect all the particles rather easily. For the decay branching-ratio to the ΛΛ final state, we needs detailed theoretical evaluation, although this coherent kaon absorption strength would not be small because of the favored isospin-zero channels.

We submitted the LOI to J-PARC to search for such double anti-kaonic nuclear systems at the existing K1.8BR beamline with the E15 spectrometer, or the newly K1.1 beamline. Now, we are preparing the proposal to J-PARC with more detailed studies, and this will be submitted in the next summer.

References

[1] Y. Akaishi and T. Yamazaki, Phys. Rev., **C65** (2002) 044005.;
Y. Akaishi, A. Dote and T. Yamazaki, Phys. Lett., **B613** (2005) 140.

[2] W. Weise, arXiv: nucl-th0507058 (2005).; P.~Kienle, J. Mod. Phys., **A22** (2007) 365.;
P. Kienle, J. Mod. Phys.,**E16** (2007) 905.; F. Sakuma *et al.*,
J-PARC LOI, http://j-parc.jp/NuclPart/pac_0907/pdf/LOI_Sakuma.pdf.

ϕ-mesons in Nuclei

A proton is believed to be composed of two 'Up' quarks and one 'Down' quark, and having mass of 938 MeV/c^2. On the other hand, the mass of bare quark, *i.e.*'Up' and 'Down' quark are known to be a few MeV/c^2, *i.e.* contribution of the constituent quarks to the mass of the proton is only a few % at most. The question needed to be answered is the mechanism which generates more than 90% of the proton mass from vacuum. This mechanism is now known as spontaneous breaking of the chiral symmetry, which create non zero $\langle \bar{q}q \rangle$ expectation value in vacuum. This $\langle \bar{q}q \rangle$-condensation is the major source of the low lying hadron masses such as protons, neutrons, pions, *etc*. In the theoretical framework, the $\langle \bar{q}q \rangle$ expectation value (chiral order parameter in other word) is a function of temperature and chemical potential (density).

Various experiments have been performed to detect the restoration of the chiral symmetry. One of the approach is the formation of meson nucleus bound state and measurement of the energy levels of the state which will be a direct connection to the $\langle \bar{q}q \rangle$ expectation value in nucleus.

Here we are focusing on the ϕ meson in nucleus. Experimental study of ϕ meson invariant mass spectra via di-electron measurement in the *pA* reaction reported about 3 % mass reduction of the ϕ meson in medium-heavy nuclei (Cu), but no mass shift in light nuclei (C) [1]. On the other hand, in this measurement, the natural width broadening of ϕ meson is only found to be $\Gamma_\phi^{in\ media} / \Gamma_\phi^{free} \sim 3.4$ [1]. This result indicates that the most of the produced ϕ meson in nuclear matter kept its property as a ϕ meson except to its mass. Here we are considering the meaning of 3 % (= 30 MeV/c^2) mass reduction of ϕ meson in nucleus. Hint comes from the situation of kaons in nuclei. The reference [2] pointed out that mass of the K^- will be reduced in nuclear matter due to strong attractive potential exist between K^- and nucleon. This theoretical prediction indicates that the "mass reduction of ϕ meson in nucleus" will be directly connected with the possible existence of attractive potential between ϕ meson and nucleus. The depth of the potential is expected to be at the same order as the one giving the mass reduction which has been measured. Therefore, ϕ meson bound in nuclear state, if it exists, will be a unique tool to investigate a properties of ϕ meson in nuclear media.

Here we are focusing on the reaction $\bar{p} + p \to \phi + \phi$ channel as a elementary process to produce ϕ meson bound state in nucleus. Using this reaction, we will be able to perform missing mass spectroscopy via the $X_A^Z\ (\bar{p},\ \phi)\ \phi \cdot X_{A-1}^{Z-1}$ process. This elementary process has two interesting feature. One is the rather large $\phi\phi$ production cross section near the production threshold (0.9-1.3 GeV/*c*), which is about 4 μb. The other is the yield of the kaon-associated ϕ production channels, $\phi K^+ K^-$ and $K^+ K^- K^+ K^-$, which are much smaller than that of the double ϕ production channel for the incident $\bar{p}$ momentum below 1.4 GeV/c[3], which is only less than 1/10 of the $\phi\phi$ production cross section. Those experimental fact indicates that if we find the ϕ meson as a final state particle, one more ϕ meson will be produced with high probability. Moreover, once we select only the ϕ meson emitted 0° respect to the beam direction in laboratory system, the momentum of the other produced ϕ meson is only about 200 MeV/c, which is almost of the same order of magnitude with the Fermi momentum of nucleon in nucleus. Therefore we expect marginal ϕ meson sticking probability in nucleus. The experimental method to search for ϕ meson bound state is as follows. First of all $\bar{p}$ beam with momentum of 1.0 GeV/*c* will be shooting on to the target nucleus. Then forward going ϕ meson via its decay particles, K^+K^- will be detected for missing mass spectroscopy. Once the ϕ meson caputured by the nucleus, the final state of the ϕ-meson bound state is expected to contain $K^+\Lambda$, owning to the final state interaction between captured ϕ meson and nucleon. Therefore, for this measurement, we will required final state $K^+\Lambda$ together with K^+K^- pair from forward going ϕ meson decay. To detect forward going Kaons, together with the $K^+\Lambda$ in the final state, huge reduction of background on missing-mass spectrum efficiently in $(\bar{p}, \phi)$ spectroscopy will be realized. From this measurement, one can independently deduce the mass shift information. A systematic study over several nuclear targets will yield a unique, definitive and precise determination of the in-medium mass modification of the vector meson $\phi(\bar{s}s)$. In spite of the lower cross section of $p(\bar{p}, \phi)\phi$, we can expect an excellent ground-state formation event rate of 240 per month using the $\bar{p}$ beam of 2 x 10^6 per spill on a carbon target. The conceptual design for the spectrometer is shown in Figure 1. The experimental proposal gathering an international team of proponents, has been submitted to J-PARC Program Advisory Committee and detail design and R&D work for the detector is under the way.

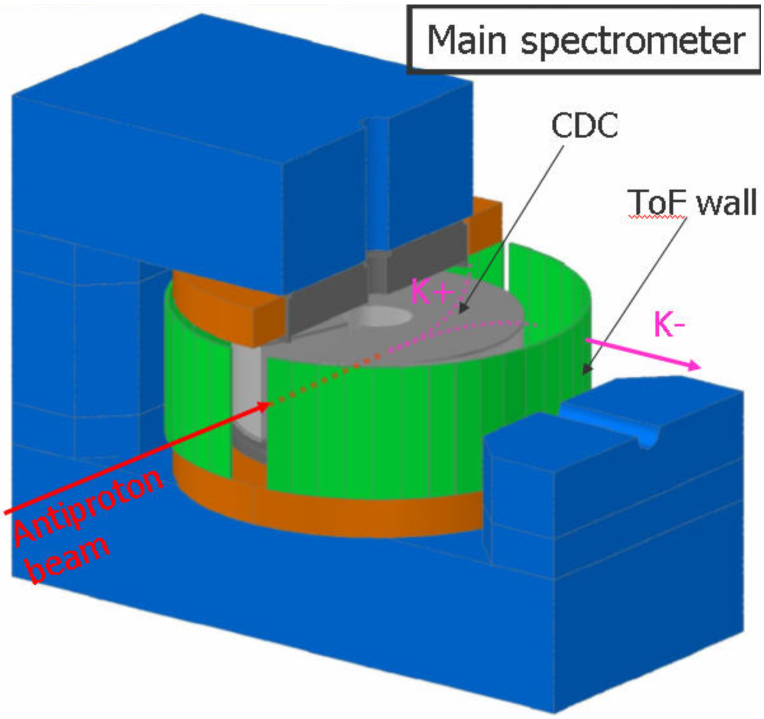


Figure 1 : Conceptual design for the Spectrometer

References

[1] R. Muto *et al.*, Phys. Rev. Lett. 98 (2007) 042501.
[2] T. Waas, Mannque Rho, W. Weise ,Nucl.Phys.A617(1997)449
[3] C.~Evangelista *et al.*, Phys. Rev. D57(1996) 5370.

3.2.1.2. R&D for Hadron Physics

Cylindrical Detector System (CDS)

Although there are several experimental reports of search for deeply-bound kaonic nuclear states [1,2,3,4,5,6], the situation is still controversial because there is no conclusive evidence for the observation of such bound states. Actually, in both experimental and theoretical sectors, the obtained binding energy and decay width of the K^-pp state vary from a few 10 MeV to around 100 MeV.

In order to clarify this controversial issue, the J-PARC E15 experiment was proposed to search for the simplest kaonic nuclear bound states, namely K^-pp, via the in-flight ^{3}He (K^-,n) reaction using 1.0 GeV/c K^- beam[7]. This experiment has the advantage that the exclusive measurement can be performed by a simultaneous measurement of missing mass spectrum using the primary neutron and invariant mass spectroscopy via the expected decay $K^-pp \rightarrow \Lambda\, p \rightarrow p\pi^- p$.

The E15 spectrometer consists of four parts, namely Beam-line spectrometer, Cylindrical Detector System (CDS) with liquid ^{3}He target system, Beam Sweeping Magnet and Neutron TOF wall. The decay particles from the expected decay $K^-pp \rightarrow \Lambda\, p \rightarrow p\pi^- p$ are detected by the CDS, and the Neutron TOF wall detects forward neutrons whose flight length are about 15 m. Incident kaons which pass through the target are bent by the Beam Sweeping Magnet which is placed just after the CDS. The expected spectrometer performance for the K^-pp measurement is 9.2 MeV/c^2 (σ) for the missing-mass resolution via neutron detection, and 16 MeV/c^2 for the invariant-mass resolution via the K^-pp decay, where we assume the K^-pp binding energy to be 100 MeV/c^2. In the following sentences, a preparation status of the CDS is described.

In the CDS, all detectors are configured cylindrically. Trajectory of particles is reconstructed with the Cylindrical Drift Chamber (CDC) which operates in a magnetic field of 0.5 T provided by the solenoid magnet. The Cylindrical Detector Hodoscope (CDH) which surrounds the CDC is used for the trigger and the particle identification counter. The solid angle of the CDS from the center is about 7.4 sr.

The CDC consists of two aluminum end-plates of 20 mm thickness, a CFRP tube with 1 mm thick as a inner wall and six aluminum blocks which are placed outside the tracking volume. The CDC uses gold-plated tungsten of 30μ mϕ for the sense wires and gold-plated aluminum of 100 μmϕ for the field and guard wires. These wires are supported by feedthroughs with a bush fixing the wire position. The total length along beam axis of tracking volume is about 840 mm. The argon(50%)-ethane(50%) mixed gas is used at 1 atm. The CDC has 15 layers of hexagonal cells with typical drift length of 9 mm, which are grouped into 7 super layers (A1,U1,V1,A2,U2,V2,A3).

The information of the longitudinal position is obtained by 8 stereo layers with tilt angle of typically 3.5 degree. The number of readout channels is 1816 and the total number of wires in CDC is 8064.

The CDH consists of 36 segments, and each segment is individually mounted on the inner wall of the solenoid magnet. Hamamatsu type R7761 fine-mesh Photo Multipliers (PMT) with 1.5 inch diameter. The measured time resolution of the CDH with cosmic rays is typically 71 psec, achieving the design goal.

The performance test of CDC was done using cosmic ray. Figure 1 shows a typical residual distribution obtained from the test. Applying a gaussian fit to this spectra, we obtained σ =206 μ m. In order to estimate the intrinsic resolution of the CDC, we performed a simple simulation, where straight tracks are generated and make a hit with a given intrinsic resolution and then the data are analyzed using the same routine as that used in the cosmic-ray test. Figure 2 shows the results of the simulation, together with the result of the cosmic-ray test. By comparing the results, the intrinsic resolution for a straight track is determined to be 200 μm.

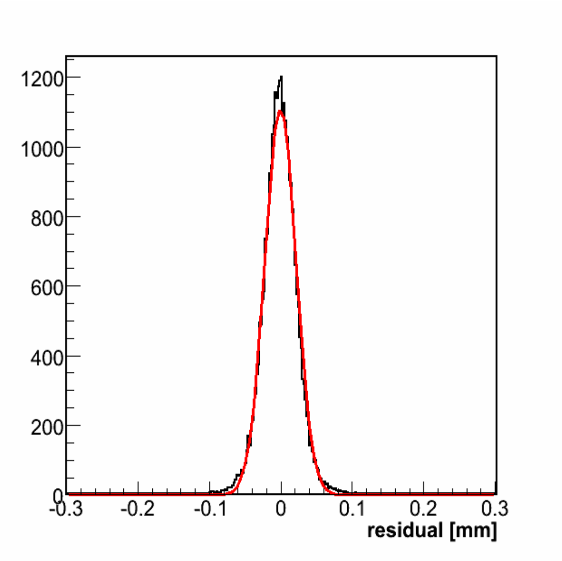


Figure 1 : A typical residual distribution obtained from the cosmic-ray test.

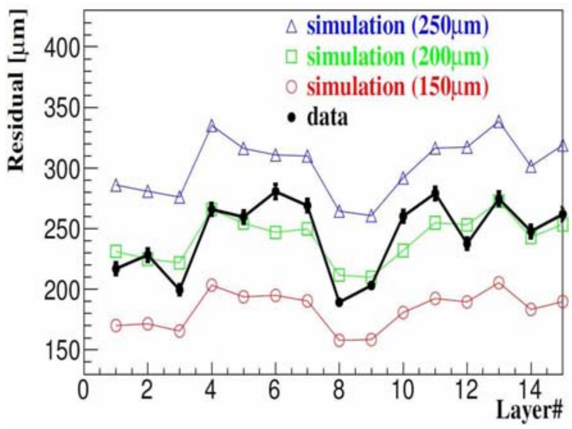


Figure 2 : Layer dependence of CDC resolution. The black line shows the measured resolution from the cosic-ray test. The red, green and blue lines corresponds to the results of simulations, assuming the intrinsic resolution of 150, 200 and 250 mm, respectively.

In order to estimate the performance for CDS, we performed a Monte Carlo simulation. Basic parameters used for the MC simulation are (1) the intrinsic resolution of CDC σ =200 μ m, which is determined from the cosmic-ray test, and the field strength inside the magnet 0.5 T. To evaluate the invariant mass resolution for Λ and K^-pp states, K^-pp are generated in the following way.

- The binding energy and decay width of K^-pp are set to 100 MeV and 0, respectively.
- K^-pp is generated uniformly in the center-of-mass frame.
- K^-pp decays into Λ and proton in an isotropic way.

Figure 3 and Figure 4 shows reconstructed mass spectrum of (a) Λ and (b) K^-pp. The expected invariant mass resolution is 2.2 MeV/c^2 for Λ and 15 MeV/c^2 for K^-pp.

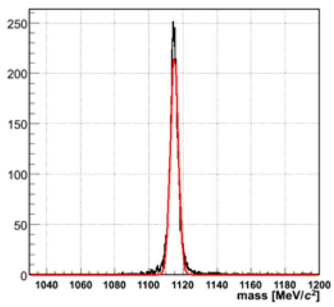


Figure 3 : Λ invariant mass

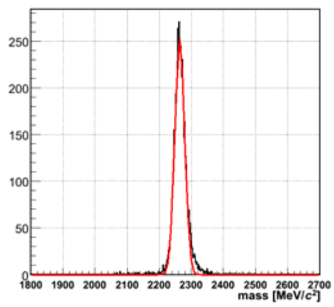


Figure 4 : K^-pp invariant mass

Finally, The CDC and CDH were already successfully installed in the solenoid magnet as shown in Figure 5. The excitation of the solenoid and the performance study of CDC and CDH in the magnetic field will be performed in March to April 2010.

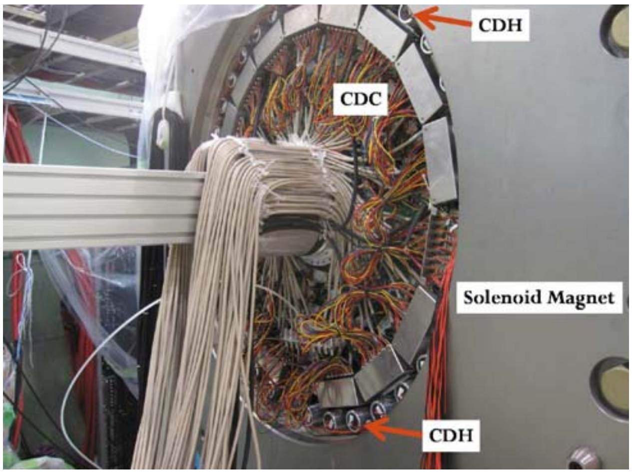


Figure 5 : A picture of CDS. CDC and CDS are installed in the solenoid magnet

References

[1] M. Sato *et al.*, Phys. Lett. **B 659,** 107 (2008)

[2] T. Suzuki *et al.*, Mod. Phys. Lett. **A 24**, 442-445 (2009)

[3] T. Kishimoto *et al.*, Prog. Theor. Phys. **118**, 181 (2007)

[4] M. Agnello *et al.*, Phys. Rev. Lett. **94**, 212303 (2005)

[5] G. Bendiscioli *et al.*, Nucl. Phys.**A 789**, 222 (2007)

[6] T. Yamazaki *et al.*, arXiv:0810.5182 [nucl-ex]

[7] M. Iwasaki *et al.*, Proposal of J-PARC 50-GeV PS ``A search for deeply-bound kaonic nuclear states by in-flight ^{3}He(K^-,n) reaction", (2006)

Development of a TGEM-TPC

The experiment J-PARC E15 searches for the simplest kaonic nuclear bound state, K^-pp, by in-flight ^{3}He(K^-,n) reaction. The key point of such a measurement is to identify precisely Λ and Σ decays with the secondary vertex reconstruction, because expected decay modes of K^-pp are pΛ /pΣ^0 and pπΣ. To realize these measurements we are developing a Thick Gas Electron Multiplier (TGEM) Time Projection Chamber (TPC) as an inner tracker for the E15 upgrade. The readout of a TPC with the TGEM has many advantages: robustness and cost-effectively fabrication of TGEM, unnecessary of the support frame, good single-point accuracy and multi-track resolution in projection, substantial reduction of ion feedback, and so on. The requirements for the detector are spatial resolutions of within 1mm in z-direction, and low material budget in the detector acceptance.

The TPC has a cylindrical design with an inner diameter of 170 mm and an outer diameter of 280 mm, filled with P10 gas at atmospheric pressure. The drift length is 30~cm with the field-cages of a double-sided flexible Printed Circuit Board (PCB) with staggered strip electrodes. The schematic view and photograph of the TPC are shown in Figure 1. We use a double-TGEM structure for amplification, and signals are read out with 4~mm long and 20~mm wide pads printed on a standard PCB. The TGEM is made from double-clad FR4 plate, using standard PCB techniques, with mechanically drilled holes and chemically etched rims. We use 400 μm FR4 plates with holes of ϕ ~0.3 mm and rims of ϕ ~0.36 mm, typically.

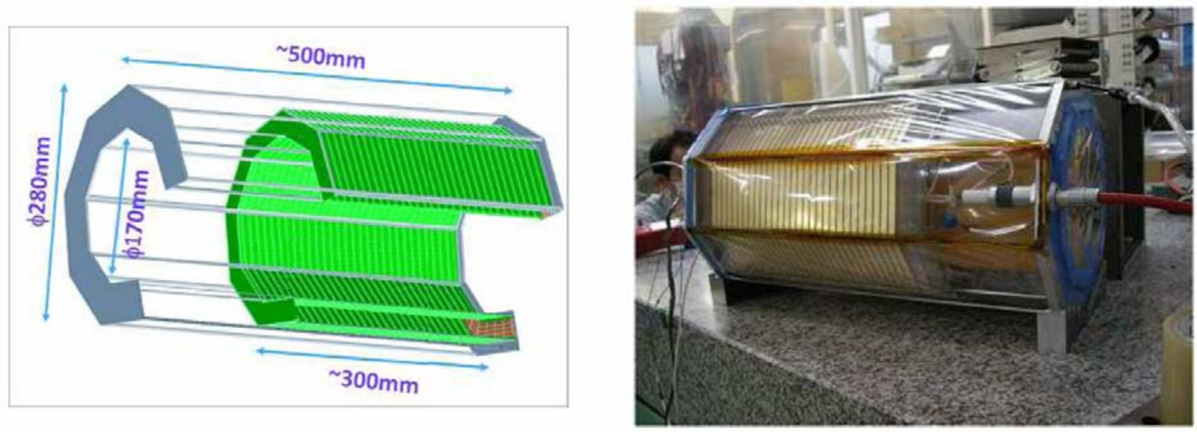


Figure 1 : A schematic view and photograph of the TPC.

To study the performances of the TGEM, we use a prototype TGEM with an active area of 10 x 10 cm^2 produced by REPIC Corp., Japan. The requirements for the TPC-TGEMs are effective gain of approximately 10^4 and stability of the gain and energy resolution. We tried many types of TGEM, i.e. 200/400 μ m thickness, ϕ 300/500 μm hole size, 0/30/50/100 μm rim size, and so on. All types of TGEM with thickness of 400 μm achieve the maximal effective gain of above 10^4, but TGEMs with larger rims require higher voltage. And TGEMs with no-rims and small-rims (30 μm) work rather stably, however, TGEMs with large-rims (100 & 50 μm) are in-stable. It is highly possible that this instability is caused by charge-up of insulator not metalized, but that's not understood well so far. Farther studies for basic TGEM behavior and performance are in progress now.

To avoid the effects of rims, we are developing a new resistive-electrode TGEM (400 μm thickness) which has electrodes coated with graphite paint and drilled holes of ϕ~0.3 mm without rims, which has an advantage of being fully spark-protected. In addition, we are developing a new hybrid-TGEM, i.e. TGEM with carbon and copper electrodes on each side without rims, recently. These new types of TGEM would solve the difficulties of conventional TGEM.

Development of Cryogenic Targets

A super-fluid liquid ^{4}He target was developed to experimental search for deeply bound kaonic nuclear states by the ^{4}He($K^-_{stopped}$, N) reaction at the K5 beamline of the KEK 12-GeV proton synchrotron (E471, E549)[1]. One of the most critical background sources is the negative pion absorption, $\pi^-NN \rightarrow NN$. A most effective way to suppress this background is to reduce the amount of material around the liquid ^{4}He target. It was accomplished by two approaches. One was to utilize the properties of super-fluid helium of extremely high thermal conductivity and low vapor pressure. The other was to develop a thin-walled

CFRP vacuum chamber and a PET-based target cell. The wall thickness of the CFRP vacuum chamber was only 0.9 mm with the inner diameter of 310 mm. The dimensions of the target cell were 200 mm inner diameter and 150 mm length with the volume of 4.7 l (2.175 g/cm^2 in the beam direction at ^{4}He temperature below 2 K), and was equipped 75 μm thick beam windows made of a PET film. During the experimental period, liquid ^{4}He was stably-held at 1.3 K in the target cell. The performance of cryostat was the heat load to the cell and reservoir of 0.16 W and a liquid-helium consumption rate of 45 l/day.

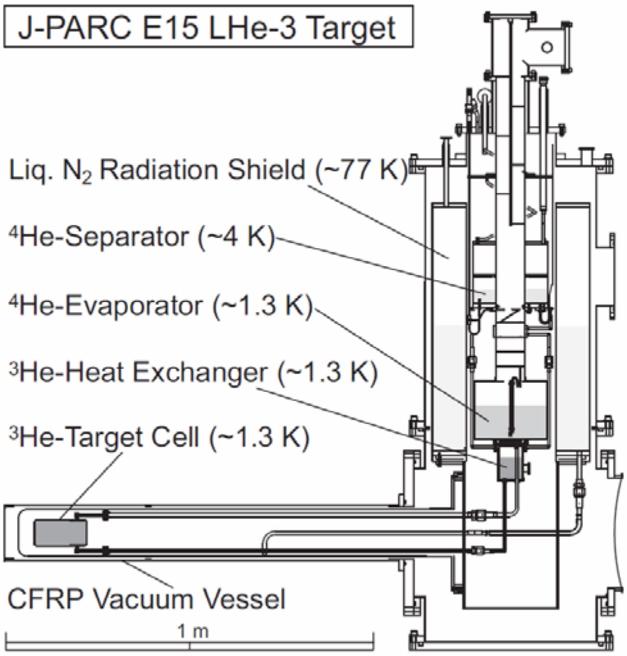


Figure 1: A schematic side view of the E15 liquid ^{3}He target.

A liquid ^{3}He target system has been developed for successive experiment of the deeply bound kaonic nuclei by in flight ^{3}He(K$^-$, n) at J-PARC (E15). Figure 1 shows the design of the liquid ^{3}He target which is based on the techniques developed for the super-fluid ^{4}He target. The target was designed by L-form to place a target cell in the center of the cylindrical detector system. Liquid ^{4}He is supplied to the ^{4}He-separator (~4 K) inside the target system from a 1000 liter dewar placed outside by a transfer tube. From the separator, only liquid ^{4}He drop into the ^{4}He-evaporator which is placed under the separator. The inside of evaporator is decompressed down to ~2 mbar to keep a temperature of 1.3 K. The ^{3}He gas is cooled down and liquefied in the 3He-heat exchanger which is placed under the ^{4}He-evaporator. The target cell almost 1 m away from cryostat is filled with liquid ^{3}He liquefied in the heat exchanger. The cooling tests were performed at K5 experimental area in KEK-PS north counter hall. The setup of cooling system was the almost same as production run setting for E15, and 250 liters ^{3}He gas was used as the target material on the test. As a result, the target cell was cooled down and kept at 1.3 K. Since the pressure in the evaporator and cell is also measured at the same time, we were able to study the correlation of the pressure and temperature. The result is shown in Figure 2, where black and white dots are corresponding to the cell and to the evaporator. Although there are small shift due to the error of the measuring device, both measurements are in good

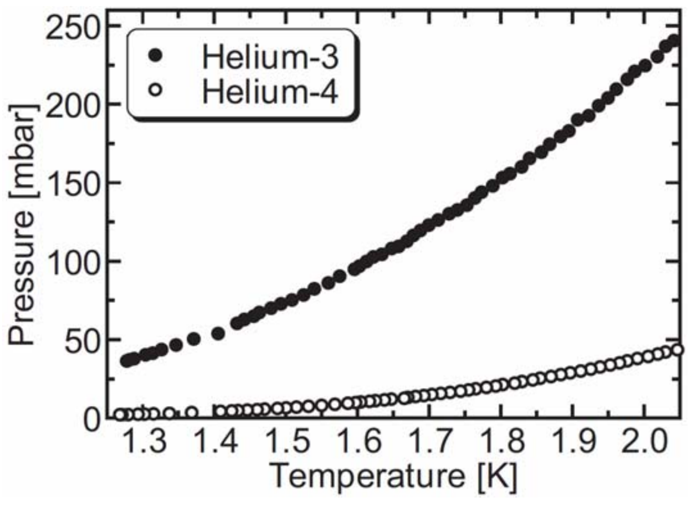


Figure 2 : The measurements of the vapor pressure curve by the correlation of the pressure and temperature in the cell and evaporator

agreement with vapor pressure curve. It is clear that liquid ^{3}He exists in the target cell. In addition, the total of the heat load to the cell, heat exchanger and evaporator is 0.19 W. High-performance cooling system for E15 liquid ^{3}He target was completed.

References

[1] M. Sato, ***et al.***, Nucl. Instr. and Meth. A **606** (2009) 233-237.

3.2.1.3. Theoretical Activities

Electron population during the cascade of kaonic nitrogen atoms and the charged kaon mass

The Particle Data Group assigned 493.677±0.013 MeV to the charged kaon mass as a world average. However, there exists a serious disagreement between the most two recent mass measurements using kaonic atom x-rays, in which the deduced masses differ about 60 keV although their individual uncertainties are about 6-7 keV. In order to settle this discrepancy, new precise charged kaon mass measurement using kaonic nitrogen atom x-rays in a gaseous target is planned at the DAΦNE.

In order to achieve the required accuracy, the electron screening effect on kaonic x-ray energy needs to be estimated correctly, which is determined by the balance between Auger electron emission and electron refilling during the atomic cascade process. Thus, the cascade calculation of kaonic nitrogen atoms invloving electron refilling process is performed and the electron population during the cascade of kaonic nitrogen atom is theoretically investigated to be useful for the future kaon mass mesurement at DAΦNE. It is found that the one 1s-electron remains with the probability of 4% at the the moment of the 6→5 kaonic x-ray emission in the gaseous target at a density $\rho = 3.4\rho_{NTP}$, which corresponds to the experimental condition at DAΦNE.

References

[1] T.Koike, Proceedings of 3rd Asian-Pacific Conference on Few-Body Problems in Physics (APFB05), World Scientific, (2007) 171

[2] T. Koike, Proceedings of International Conference on Exotic Atoms and Related Topics (EXA05), Austrian Academy of Science Press, (2006) 215

[3] T. Ishiwatari, *et al*., Phys. Lett. **B593**(2004) 48

Calculation of ^{3}He(in-flight K^-,n) spectrum for deeply-bound K^-pp state

In the study of $\bar{K}N$ interaction in nuclei, it is important to verify the presence of the deeply-bound kaonic nuclei. A three-body $\bar{K}NN$ bound state with a $[\bar{K}\otimes\{NN\}_{I=1}]_{I=1/2}$, $J^\pi = 0^-$ configuration, which is

called ``K^-pp'' symbolically, is suggested to be the lightest and the most fundamental $\bar{K}$ nucleus. Many theoretical works for K^-pp system support the existence of K^-pp bound state, but the predicted binding energies and widths are not converged because of an ambiguity of $\bar{K}N$ interaction, together with a different procedure for a three-body calculation involving decay processes. Moreover, several experimental observations of K^-pp state have been reported, but they disagree with each other.
Therefore, a new experimental search for the deeply-bound K^-pp state using ^{3}He(in-flight K^-, n) reaction have been proposed at J-PARC (J-PARC E15 experiment).

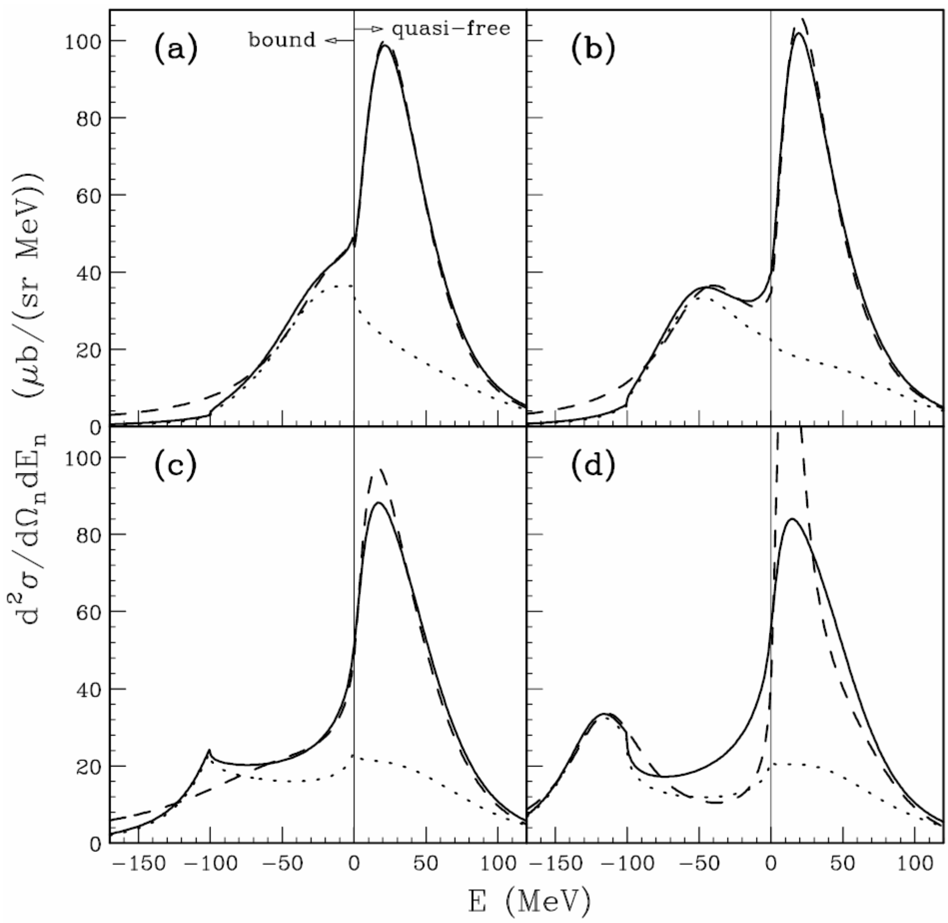


Figure 1 : Calculated inclusive spectra of the ^{3}He(in-flight K^-, n) reaction at p_{K^-} =1.0 GeV/c and q_{lab}= 0 °as a function of the energy E of the K^-pp system measured from K^-+p+p threshold for several phenomenological K^--``pp'' optical potentials. The solid and dashed curves denote the inclusive spectra with the energy-dependent U^{opt} (E) and energy-independent U^{opt}_0 potentials, respectively. The dotted curve denotes the *L=0* component in the inclusive spectrum for U^{opt} (E). The vertical line at E = 0 MeV indicates the K^- + p + p threshold, and the left- and right-hand sides of this line are the K^- bound and quasi-free scattering regions, respectively.

The formation of a deeply-bound K^- pp state by the ^{3}He(in-flight K^-, n) reaction is theoretically investigated in a distorted-wave impulse approximation using the Green's function method. The expected inclusive and semi-exclusive spectra at p_{K^-} = 1.0 GeV/c and $\theta_{lab} = 0°$ are calculated for the forthcoming J-PARC E15 experiment. We demonstrate these spectra with several phenomenological K^--``pp'' optical potentials U^{opt}(E) which have an energy-dependent imaginary part multiplied by a phase space suppression factor, fitting to recent theoretical predictions or experimental candidates of the K^-pp bound state. The results show that a cusp-like peak at the $\pi\Sigma N$ threshold is an unique signal for the K^-pp bound state in the spectrum including the [K^-pp] → Y + N decay process from the two-nucleon K^- absorption, as well as a distinct peak of the K^-pp bound state. The shape of the spectrum is explained by a trajectory of a moving pole of the K^-pp bound state in the complex energy plane. The importance of the [K^-pp] →Y + N spectrum is emphasized in order to extract clear evidence of the K^-pp bound state.

References

[1] T. Koike and T. Harada, Phys. Rev. C80(2009)055208
[2] T. Koike and T. Harada, Nucl. Phys. A804(2008)231
[3] T. Koike and T. Harada, Phys. Lett. B652(2007)262

$p\Xi^0$ force studied with lattice QCD

Study of the baryon-baryon interaction is an important subjects in the nuclear physics. The present hyperon-nucleon (YN) and hyperon-hyperon (YY) interactions have large uncertainties despite these interactions playing important roles in high density nuclear systems such as interior of neutron stars. For example, no reliable phase shift analysis of the Λ N scattering has as yet been performed experimentaly so that different phaseshifts have been predicted by different theoretical works. In principle, the interaction should be understood in terms of the dynamics of quarks and gluons, namely quantum chromodynamics (QCD).

We study the $p\Xi^0$ force by using quenched lattice QCD. The Bethe-Salpeter amplitude is calculated for the lowest scattering state of the system so as to obtain the $p\Xi^0$ potential. The numerical calculation is performed with β =5.7, the lattice spacing of a=0.1416(9) fm, on the $32^3 \times 32$ lattice. The spatial lattice volume is $(4.5\ \mathrm{fm})^3$. Two kinds of ud quark mass are used, corresponding to $m_\pi \simeq 0.37$ GeV and 0.51$ GeV. Tables 1-2 compare the hadron masses calculated from the lattice QCD with the experimental values. Figure 1 shows the effective central potential, obtained from the wave function at the time slice $t\text{-}t_0=6$ with the hopping parameter $\kappa_{ud}=0.1678$, corresponding to $m_\pi \simeq 0.37$ GeV. The scattering length is obtained from Lüscher's formula[1]. As is seen in Figure 2, the $p\Xi^0$ interaction is both attractive at $^1S_0$ and $^3S_1$ channels, and the interaction in the $^3S_1$ is more attractive than in the $^1S_0$. These attractive forces become stronger as the u,d quark mass decreases.

κ_{ud}	N_{conf}	m_π	m_ρ	m_K	m_{K*}
0.1678	1283	368(1)	813(4)	554(5)	884(2)
0.1665	1000	511.2(6)	861(2)	605.3(5)	904(2)
Exp.		135	770	494	892

Table 1: Meson masses in the unit of MeV. The numbers in parenthesis show the errorbar in the last digit.

κ_{ud}	N_{conf}	m_N	m_Λ	m_Σ	m_Ξ
0.1678	1283	1167(7)	1266(6)	1315(6)	1383(6)
0.1665	1000	1300(4)	1354(4)	1357(4)	1419(4)
Exp.		940	1116	1190	1320

Table 2: Baryon masses in the unit of MeV. The numbers in parenthesis show the errorbar in the last digit.

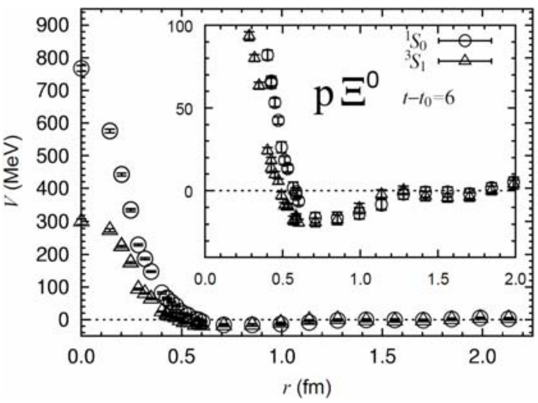


Figure 1: The effective central potential for $p\Xi^0$, in the $^1S_0$ (circle) and $^3S_1$ (triangle), obtained from the wave function at time slice t-t_0=6. The hopping parameter κappa$_{ud}$=0.1678 is used for the u,d quark. The inset shows its enlargement.

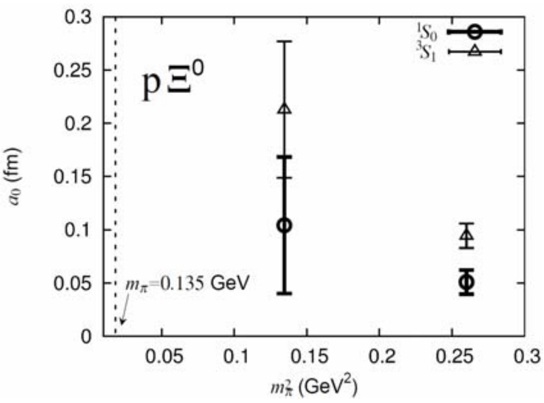


Figure 2 : The scattering lengths for $p\Xi^0$, in the $^1S_0$ (circle) and $^3S_1$ (triangle), as a function of m_π^2 . The dashed line shows the physical point at m_π =0.135 GeV.

References

[1] H.Nemura, N.Ishii, S.Aoki and T.Hatsuda, arXiv:0806.1094 [nucl-th].

[2] M. Lüscher, Nucl. Phys. B **354**, 531 (1991).

[3] S. Aoki, *et al*. [PACS-CS Collab.], arXiv:0807.1661 [hep-lat].

3.2.2. Muon Science

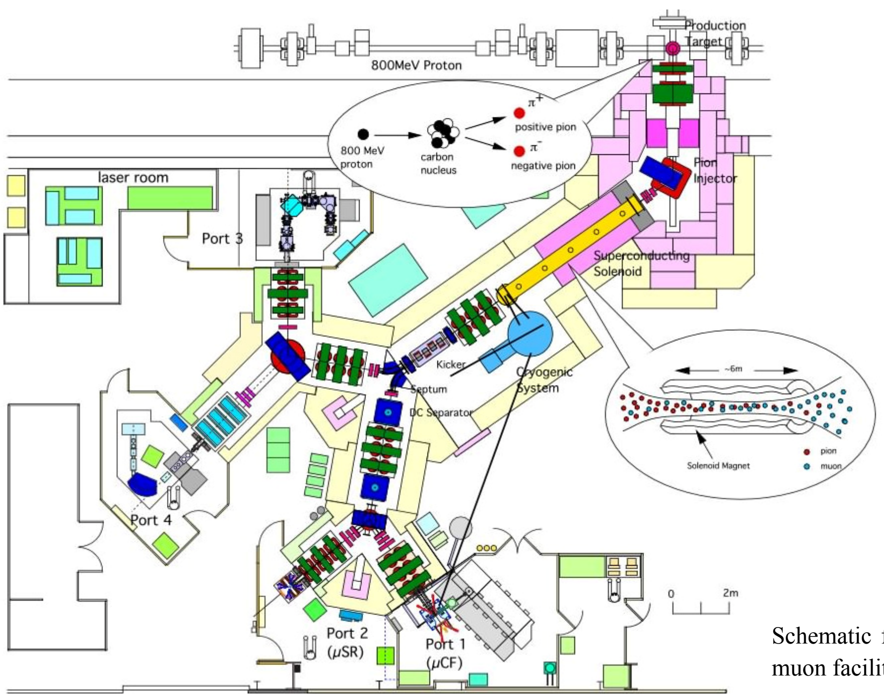
In 2002, when Iwasaki arrive at the chief scientist position of this laboratory, the RIKEN-RAL pulsed-muon facility was already in full operation mode, initiated by former chief scientist, Nagamine. Our muon facility is located inside Rutherford Appleton Laboratory in UK, attached to ISIS proton accelerator, which shared surface-muon (and pion) production target with another ISIS oriented muon facility. This production target is located upstream of the neutron production target. Our channels are located in right-hand side, and ISIS muon channels are located in left.

Our channels have four legs, and a port to each channel. Port-1 is for muon catalyzed fusion study (μCF), port-2 is for condensed matter physics using muon spin rotation method (μSR), port-3 is for R&D work for ultra-slow muon generation, and port-4 is for muonic atom x-ray measurement (μA^*). Recently, to enhance the capability of the facility, we installed pulsed laser system for port-2 to be able to perform pulse-laser driven μSR measurement, collaborating Yamanashi U., KEK and UCR. Using these four ports, we have been performing variety of experiments under international collaborations.

To make our facility competitive until full commissioning of J-PARC muon facility (MUSE), we drew up a short-term strategy, which was reviewed by our international advisory committee in 2009. They strongly endorsed two program pillars:

1. Condensed matter and molecular physics using muons
2. Ultra-slow muon development

For 1), we installed DC kicker system and new μSR spectrometer in port-4 so as to double the capability of our μSR measurement, as a member of RIKEN basic research group “Molecular Ensemble”, which is initiated by Reizo Kato a chief scientist of Condensed Molecular Materials Laboratory. For 2) we are presently developing two orders of magnitude high-intensity Lyman-α VUV laser together with Solid laser laboratory in RIKEN initiated by Satoshi Wada.



Schematic figure of RIKEN-RAL muon facility at ISIS in RAL

Science & Technology Facilities Council
Rutherford Appleton Laboratory

Dr Andrew Taylor OBE FRSE
Director, Facility Development and Operations

Science and Technology Facilities Council
Rutherford Appleton Laboratory, Harwell Science and Innovation Campus, Didcot, OX11 0QX United Kingdom

Tel +44 (0)1235 446681 Fax +44 (0)1235 445383
Email: andrew.taylor@stfc.ac.uk www.scitech.ac.uk

Dr Yasushige Yano
Director
RIKEN Nishina Center for Accelerator-Based Science
2-1 Hirosawa, Wako-shi
Saitama, 351-0198
Japan

13 January 2009

Dear Dr Yano,

RIKEN–RAL Muon Facility – International Advisory Committee Review Report

I have pleasure in enclosing the report of the second meeting of the RIKEN-RAL Muon Facility International Advisory Committee. I have also sent a copy of this report to Sydney Gales, Chair of the Nishina Centre Advisory Council.

The Committee continues to endorse the findings of its first report, namely that the RIKEN-RAL Muon Facility is world-class, with unique capabilities achieved through significant technical expertise. The Committee were pleased to observe that, since its first meeting in November 2007, there have been further highly commendable developments in collaborative activity, publications and instrumentation.

The Committee recommends that, in order to continue the excellent scientific and technical outputs of the Facility, its activities are focused on two programme pillars:

1. Condensed matter and molecular physics using muons

2. Ultra-slow muon development

The Committee was highly impressed by the existing achievements in these two areas, and felt that these two pillars allow both development of the existing outstanding science programme, together with providing challenging goals for unique, world-class future developments. The Committee was keen to support the provision of sufficient financial and manpower resources to both of these areas to enable their development.

To allow continued world-class science at the RIKEN-RAL Facility focusing on these two pillars, the Committee recommends an extension of the RIKEN-RAL agreement beyond 2010 by at least another 7½ years to 2018.

In support of this recommendation, the Committee noted that conditions are appropriate for continued investment in the Facility, namely:

- a strong publication record from the Facility (including further publications since the first IAC meeting), particularly in the area of condensed matter and molecular physics;
- plans for an ambitious, unique project for the development of an ultra-slow muon source suitable for a pulsed muon facility;
- a strong user base involving many groups in Japan, desire for use of RIKEN-RAL facilities by UK researchers, and future potential for expansion of the user community in other Asian countries;

INVESTOR IN PEOPLE

- real scientific and technical leadership – both in the area of condensed matter and molecular studies using muons, and in the area of fundamental nuclear physics using muons;
- strong support from the Japanese muon society for the RIKEN-RAL Muon Facility;
- strong support from ISIS for continuing to host the RIKEN-RAL Muon Facility.

I look forward to presenting these recommendations at the RIKEN Nishina Centre Advisory Council meeting, and to talking with you further during my visit.

It was once again a pleasure to chair the RIKEN-RAL International Advisory Committee. We particularly appreciated your hospitality during the review, and the chance to see the impressive radioactive ion beam facilities which are being developed at the Nishina centre.

Yours sincerely

Andrew Taylor

cover page of RIKEN-RAL IAC report January 2009

3.2.2.1. Individual topics of Muon Science

Muon Catalyzed Fusion with High-pressure Solid D_2+T_2 Target toward Realization of Scientific Breakeven at the RIKEN-RAL Muon Facility

Abstract

We are aiming at achieving scientific breakeven with muon catalyzed d-t fusion (d-t μCF). The goal is to generate more than 300 d-t fusion neutrons per muon. As the first step, we are manufacturing a high-pressure solid D_2 target, and will commence muon catalyzed d-d fusion study to measure the d-d μCF cycling rate and the muon loss probability around 30K in solid D_2. Then we will extend the study to d-t μCF with high-pressure solid D_2 + T_2 target to achieve scientific breakeven.

Achievement

In order to increase the d-t μCF cycling rate, it is required to (1) increase the dtμ formation rate, (2) decrease the muon loss probability (by increasing the reactivation rate) and (3) increase the D_2 + T_2 target density. We have observed an anomalous temperature dependence of d-t μCF cycling rate in solid D_2 + T_2 target [1]. The figure shows that the d-t μCF cycling rate (λ_c) (top) increases by 20% as the solid target temperature increases from 5K to 17K. In addition, muon loss probability (W) (middle) decreases with the temperature. Possible explanations of the temperature dependence are (1) increase of the dtμ formation rate, (2) increase of the reactivation rate, (3) increase of the quasi-resonant molecular formation (3-body effect) and (4) increase of condensed matter effect (phonon contribution). Though there has been no definitive theory explaining the temperature dependence, we have decided to extend our study on d-t μCF experiment with solid D_2 + T_2 target to higher temperature region (up to 30K) towards realization of scientific breakeven. For this purpose, we are developing a high-pressure solid D_2 + T_2 target with the operation condition of 30K and 1,000atm. As a proto-type, we have manufactured a high-pressure solid D_2 target, and will make d-d μCF experiment to measure temperature dependence of d-d μCF cycling rate and muon loss probability at solid D_2 temperature range from 5K to 30K.

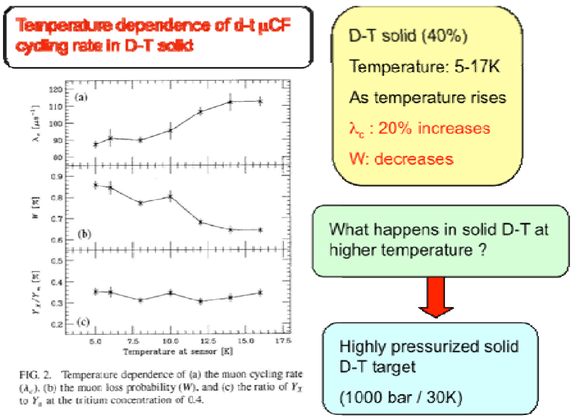


Figure: Temperature dependence of d-t μCF parameters in solid D_2 + T_2 target

Publications

1) "Discovery of temperature-dependent phenomena of muon-catalyzed fusion in solid deuterium and tritium mixtures", N. Kawamura, K. Nagamine, T. Matsuzaki, K. Ishida, S.N. Nakamura, Y. Matsuda, M. Tanase, M. Kato, H. Sugai, K. Kudo, N. Takeda, G.H. Eaton, Phys. Rev. Lett. **90**, 043401 (2003).

Observation of the ddμ Formation Rate Dependent on the Ortho-Para Concentration of D_2 Molecules in Muon Catalyzed d-d Fusion

Abstract

We observed for the first time that the ddμ formation rate in muon catalyzed fusion is quite different for the ortho-D_2 and para-D_2 target. The effect showed an interesting dependence on the density of the D_2 target.

Achievement

The muonic molecule formation rate is one of the most important parameters in muon catalyzed fusion. The rate itself limits the efficiency of fusion catalysis. In addition, the process involves rich physics of the few body problems at an unique scale. We have developed a method to prepare nearly pure D_2 and para-rich D_2 and also the detection system for d-d fusion neutrons using the d.c. muon beam at TRIUMF. With these methods, we were able to separate contributions to ddμ formation from ortho-D_2 and para-D_2 for the first time. The first measurement in solid D_2 has shown surprisingly an effect opposite to theoretical predictions. After systematic measurement for liquid and gas D_2 at various densities and at temperatures ranging between 3 K and 40 K, we have found that the effect is very much dependent on the target density. This indicates either a strong contribution of sub-threshold resonance at higher density or a modification of the resonance energy with the density. We plan a systematic measurement using the new high pressure D_2 target we are developing in order to cover a wider temperature range up to 300K.

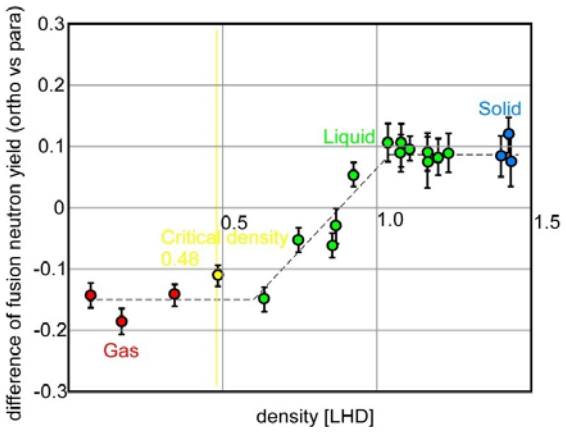


Figure: Density dependence of the difference of d-d fusion neutron yield in ortho D_2 and para D_2 around 35 K.

Publications

1) "Density effect in *d–d* muon-catalyzed fusion with ortho and para-enriched D2", H. Imao, et al., Physics Letters B **658**, 120 (2008).

2) "Dependence of muon-catalyzed d-d fusion on the ortho-para ratio in solid and liquid deuterium", H. Imao, et al., Physics Letters B **632**, 192 (2006).

X-ray Measurement from Muonic Atoms of Implanted Stable (Unstable) Nuclei in Solid D_2 layer for Study of Nuclear Charge Density Distribution

Abstract

A feasibility experiment of muonic X-ray spectroscopy using solid D_2 layer with implanted nuclei has been performed to study nuclear charge density distribution of stable and unstable nuclei. As the demonstration data, muonic X-rays from ^{148}Sm and ^{152}Sm were successfully observed, showing characteristic spectra for spherical and deformed nuclei.

Achievement

Negative muons (μ^-) are injected to solid deuterium layer after ion implantation of nuclei (A), and form muonic hydrogen atoms ($d\mu^-$). Then, the $d\mu^-$ atoms diffuse, and collide with the implanted nuclei to form muonic atoms (μ^-A) via muon transfer. In the formation process, characteristic muonic X-rays are generated. The muon orbit is closely located to the nuclear surface, and muonic X-ray energies are influenced by nuclear charge density distribution (nuclear shape). By measuring muonic X-ray energies and isotope energy shifts, precise information on nuclear charge density distribution is obtained. The experimental apparatus is equipped with a surface ionization source to produce alkali, alkali-earth and rare-earth (Sm, Nd) ions for implantation to solid D_2 layers. For example, samarium isotopes show very abrupt changes in their nuclear characteristics from spherical to deformed nuclei. ^{144}Sm is magic in neutrons (N = 82) and display the characteristics of a stiff spherical nucleus, whereas ^{152}Sm and ^{154}Sm reveal the characteristic of deformed nuclei whose muonic X-ray spectra are expected to show a 2p hyperfine structure. As shown in figure, a successful observation of muonic X-rays from ^{148}Sm and ^{152}Sm was achieved. The obtained muonic X-ray energies, isotope shift and 2p hyperfine splitting agree with the existing data, and will be compared with theoretical calculation including nuclear physic parameters.

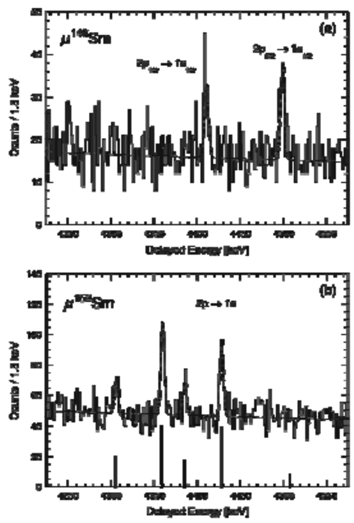


Figure: Delayed energy spectrum of the 2p→1s muonic transitions measured with 1-mm pure D_2 layer implanted of about 1 ppm of ^{148}Sm and ^{152}Sm, respectively.

Publication

1) "Muon spectroscopy with trace alkaline- earth and rare-earth isotopes implanted in solid D_2", P. Strasser et al., Hyperfine Interact **193**, 121 (2009).

Precision Measurement of the Positive Muon Lifetime ($\tau_{\mu+}$) with a Highly Intense Muon Beam at RIKEN-RAL

Abstract

The $\tau_{\mu+}$ is associated with the Fermi coupling constant (G_F), which is one of the fundamental constants in the Standard Model. We developed a new experimental method for intense pulsed beam and obtained $\tau_{\mu+}$ in 51 ppm precision. The result is consistent with previous measurements. The established method is an important milestone to a new measurement with intense pulsed muon beam.

Achievement

The Standard Model (SM) requires three experimental input parameters (α, M_Z and G_F). Muon is the best probe for precision measurement of G_F in a ppm level, which means that this experiment is the precision test of the SM.

We established the new method named "multi-decay per one time window method": we used the intense pulsed muon beam for the first time to observe the large number of muon decay (~$1.15\text{x}10^{10}$) in a low background (B/S ~ $5\text{x}10^{-5}$) with highly segmented detector (MWPC,192ch) and developed associated new techniques such as the target system, the clock system and DAQ. In the offline analysis, we also developed a new numerical correction method to solved pile-up problem. The results were

$$\tau_\mu = 2197.01 \pm 0.11 \quad \text{stat.} \quad {}^{+0.006}_{-0.034} \quad \text{syst.} \qquad (51\text{ppm})$$

$$G_F = (1.166372 \pm 0.000029) \times 10^{-5} \quad \text{stat. + syst.}$$

This result is consistent with the previous measurements. This "RIKEN-RAL pulsed method" is an important milestone for the future muon lifetime measurement with a very high intense pulsed muon beam.

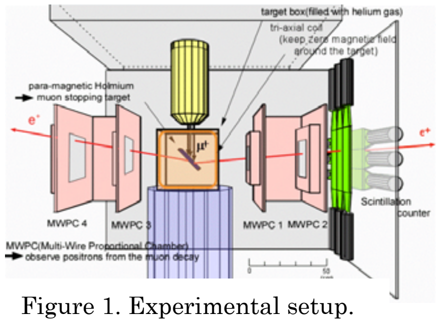


Figure 1. Experimental setup.

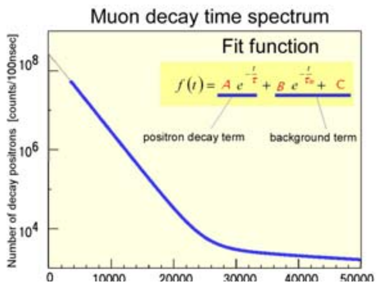


Figure 2. Muon decay time spectrum and fitting function

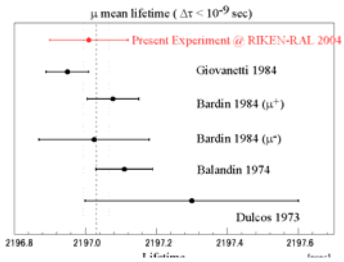


Figure 3. Lifetime precision in the past 30 years.

Publications

1) "Precise muon lifetime measurement with a pulsed beam at the RIKEN-RAL muon facility", D. Tomono, S.N. Nakamura, et. al., Nucl. Phys. B **149,** 341 (2005).

2) "Precise measurement of the positive muon lifetime and test of the exponential decay law", D. Tomono, S.N. Nakamura, et. al., Journal of Physics G **29**, 2013(2003).

3) "Muon Lifetime measurement at RIKEN-RAL and prospects at an intense muon source", D. Tomono, S.N. Nakamura, et. al., Nuclear Instruments and Methods A **503**, 283(2003).

Observation of Quasi-Static Internal Fields in the Normal State of the Cu-based Superconductor, $La_{2-x}Sr_xCuO_4$

Abstract

Quasi-static internal fields at the muon site have been observed from precise ZF-μSR measurements on the high-T_c superconductor, $La_{2-x}Sr_xCuO_4$, in the normal state of around 100 K. The quasi-static internal fields would be due to the theoretically predicted microscopic orbital circular currents caused by the formation of the spin-gap state. Our observation indicates that the orbital circular current would be dynamically fluctuating.

Achievement

We have carried out precise μSR on the high-T_c superconductor $La_{2-x}Sr_xCuO_4$ in the normal state around 100 K accumulating higher statistics of muon events rather than usual. Tiny changes of the time spectrum have been revealed to be due to changes of the dynamics of an additional internal field at the muon site. The magnitude of the additional internal field was around a couple of Gauss and the fluctuation frequency was the order of 100 kHz. This quasi-static internal field appears around 100 K as shown in Fig. (a) and (b). The current study would prove the appearance of the theoretically predicted microscopic circular current caused by the formation of the spin-gap state in the high-T_c superconductors and indicate that the predicted circular current is dynamically fluctuating with the low frequency of about 100 kHz.

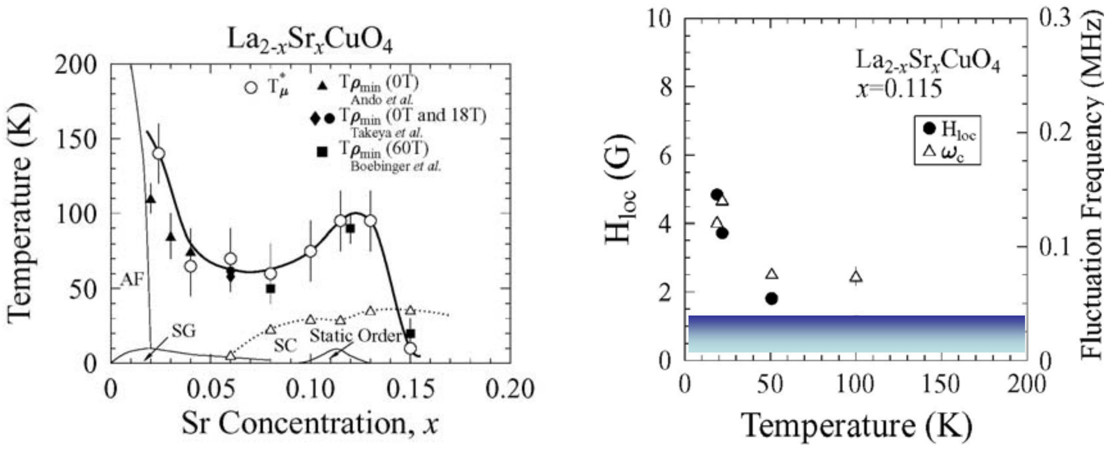


Figure: (a) Phase diagram determined from the current precise ZF-μSR study. Open circles show temperatures where the quasi-static internal field appear. (b) Temperature dependences of the magnitude and frequency of the quasi-static internal field in the case of x=0.115.

Publications

I. Watanabe *et al.*, J. Phys. Soc. Jpn. **77**, 124716 (2008).

First Indication of a Relationship between Magnetic Correlations and Superconducting State in Fe-Based Superconductors

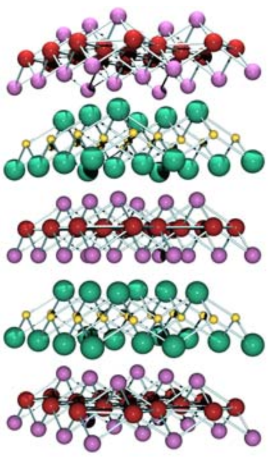
Abstract

A magnetic phase diagram of the Fe-based superconductor, $SmFeAsO_{1-x}F_x$, has been firstly suggested from ZF-μSR measurements on the collaboration between RIKEN and ISIS muon groups. A possible co-existing state between magnetically ordered and superconducting states has been suggested between x=0.10 and 0.15.

Achievement

The Fe-based superconductor has been launched from Japan to open a new field of superconductors. We have preformed ZF-μSR measurements on $SmFeAsO_{1-x}F_x$ in order to investigate the carrier concentration dependence of a magnetically ordered state and the superconducting state. Figure (a) shows the crystal structure of $SmFeAsO_{1-x}F_x$ and Figure (b) shows the magnetic phase diagram suggested from our current study. There is a clear region between x=0.10 and 0.15 where the superconducting state and the magnetically ordered state possibly show the co-existing state. This result shows the first indication of the possible co-existing state between the magnetically ordered state and superconducting state in the Fe-based superconductor. We have shown from the current study that a similar discussion on the origin of the superconducting state to that of high-T_c Cu-base superconductors would be applied to Fe-based superconductors as well.

(a)



(b)

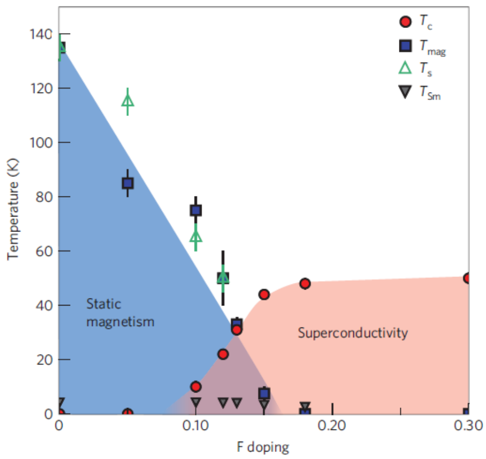


Figure: (a) Crystal structure of $SmFeAsO_{1-x}F_x$. (b) Magnetic phase diagram suggested from the current ZF-μSR study.

Publications

1) A.J. Drew *et al*., Nature Material **8**, 310 (2009).

2) A.J. Drew *et al*., Phys. Rev. Lett. **101**, 0970101 (2008).

μSR Study around a Quantum Critical Point
--- Magnetism and Superconductivity ---

Abstract

One of the most exciting topics in modern condensed matter physics is the interplay between different electronic ground states near a quantum critical point (QCP). Especially, studying a relationship between magnetism and superconductivity in the vicinity of QCP is very important to understand the mechanism of superconductivity, i.e., competitive or corporative. We have performed μSR measurements in following superconductors in order to elucidate their mechanisms; (i) FeAs-based superconductors: LaFeAs(O,F), LaFeAs(O,H), $(Ba,K)Fe_2As_2$, $Ba(Fe,Co)_2As_2$; (ii) Antiperovskite-type superconductor: $ZnNNi_3$; (iii) Heavy fermion systems: $CeCo(In,Cd)_5$, $(Ce,La)_2IrIn_8$, $Ce_2Rh(In,Sn)_8$

Achievement

Figure shows the temperature dependence of the muon spin relaxation rate σ_v, which corresponds to the inverse squared in-plane magnetic penetration depth λ ($\sigma_v \propto \lambda^{-2}$), in $Ba_{0.75}K_{0.25}Fe_2As_2$ under H = 500 Oe. The lines represent the known *s*- and *d*-wave superconducting gap behaviors and the result of a fit to the two gap model, which is assuming two independent contributions to the total σ_v. It is obvious that two gap model well reproduced the data, while the data shows significant departure from the simple *s*- and *d*-wave curves. Therefore, the two gap scenario is qualitatively consistent with our experimental data to explain the superconducting pairing mechanism.

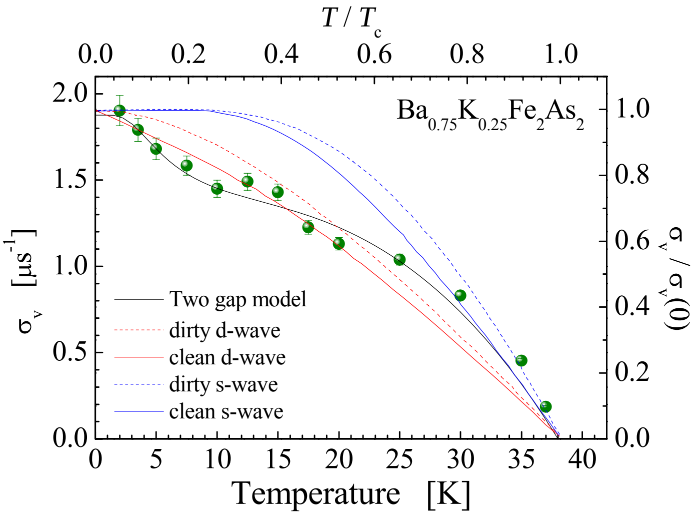


Figure: Temperature dependence of muon spin relaxation

Publications

1) "Development of the heavy-fermion state in Ce_2IrIn_8 and the effects of Ce dilution in $(Ce_{1-x}La_x)_2IrIn_8$", K. Ohishi *et al.*, Phys. Rev. B **80**, 125104/1-7 (2009).

2) "Magnetism and Superconductivity in Heavy Fermion Superconductor $CeCo(In_{0.97}Cd_{0.03})_5$", K. Ohishi *et al.*, Physica B **404**, 754-756 (2009).

3) "Quasiparticle excitations in newly discovered antiperovskite superconductor $ZnNNi_3$", K. Ohishi *et al.*, Physica C in press.

Quantum Critical Behavior and Soft Mode in the Randomness- introduced Quantum Spin Systems Probed by LF-μSR Measurements

Abstract

Longitudinal-field muon-spin-relaxation (LF-μSR) measurements were carried out on the randomness-introduced quantum spin systems. The relative temperature change of the muon-spin-relaxation rate λ in longitudinal-fields, which corresponds to the wave-vector integration of the generalized dynamical susceptibility, were deduced from LF-μSR measurements.

Achievement

In the mixed system $Tl_{1-x}K_xCuCl_3$, the spatial randomness of the local chemical potential is introduced through the difference of the value of the dominant intradimer interaction between $TlCuCl_3$ and $KCuCl_3$. Magnetization measurements suggest that the ground state is a magnetic state with finite susceptibility in the mixed system in zero field, although finite excitation gap remains. To investigate microscopic dynamical magnetic properties in highly random systems, we carried out detailed longitudinal-field muon-spin-relaxation measurements in $Tl_{1-x}K_xCuCl_3$ with x = 0.60 single crystals. Deduced relative temperature change of the muon spin relaxation rate λ in each longitudinal field is shown in Fig. 1. The temperature where the peak is observed decreases with decreasing the magnetic field. The muon-spin-relaxation rate λ in the longitudinal field corresponds to the wave-vector integration of the generalized dynamical susceptibility. In other word, the longitudinal field (H_{LF}) dependence of λ corresponds to the frequency ($\omega_{LF} = \gamma_\mu H_{LF}$) spectrum of spin fluctuations. Therefore, observed peak shift to lower temperatures with decreasing H_{LF} is the observation of the slowing down of Cu-3d spins fluctuation frequency, and is interpreted as the soft mode of spin waves toward a possible magnetic phase transition.

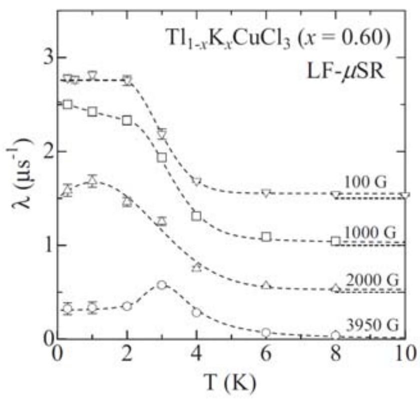


Figure 1: Relative temperature change of λ in each longitudinal field.

Publications

1) "Quantum critical behavior in highly random systems $Tl_{1-x}K_xCuCl_3$ probed by zero- and longitudinal-field muon-spin-relaxation measurements", T. Suzuki, F. Yamada, T. Kawamata, I. Watanabe, T. Goto, and H. Tanaka, Phys. Rev. B **79**, 104409-(1-5) (2009).

2) "Muon spin relaxation detection of the soft mode toward the exotic magnetic ground state in the bond-disordered quantum spin system IPA-$Cu(Cl_{0.35}Br_{0.65})_3$", T. Goto, T. Suzuki, K. Kanada, T. Saito, A. Oosawa, I. Watanabe, and H.Manaka, Phys. Rev. B **78**, 054422-(1-6) (2008).

μSR Study of the Spin-Lattice Cooperative Phenomenon of $RbCoBr_3$

Abstract

We carried out μSR experiments of $RbCoBr_3$ whose results are reproduced by a spin-lattice model considering a new concept "lattice frustration". As a result, it is found that the magnetically ordered state between T_{N1} and T_{N2} is a ferrimagnetic phase but not the partial disordered phase suggested by the spin-lattice model. It is likely that the suitable parameters are not determined in this model.

Achievement

$RbCoBr_3$ is a very unique frustration compound with spin and lattice frustration suggested by a new spin-lattice model which is introduced in the frustration of not only spin systems but also lattice systems, say "lattice frustration". In order to investigate the spin-lattice cooperative phenomenon of $RbCoBr_3$, we carried out μSR experiments.

Clear muon spin rotation was observed below the partial disordered (PD) phase transition temperature T_{N1} ~ 37 K. Temperature dependence of the precession frequency obtained by Fourier analysis of the spectra is shown in Figure. It is found that there are two frequency components below T_{N1}. Our calculation of the dipole field from the spins on Co^{2+} ions in PD phase shows only one frequency component. On the other hand, it is predicted by the spin-lattice model that a two-sublattice ferrimagnetic (2FR) phase appears in a very small temperature region around T_{N1}. Our field calculation for the 2FR phase shows two frequency components. Accordingly, the magnetically ordered state between T_{N1} and T_{N2} in $RbCoBr_3$ is the 2FR phase but not the PD phase. There is a possibility that the parameters in the spin-lattice model are not suitable.

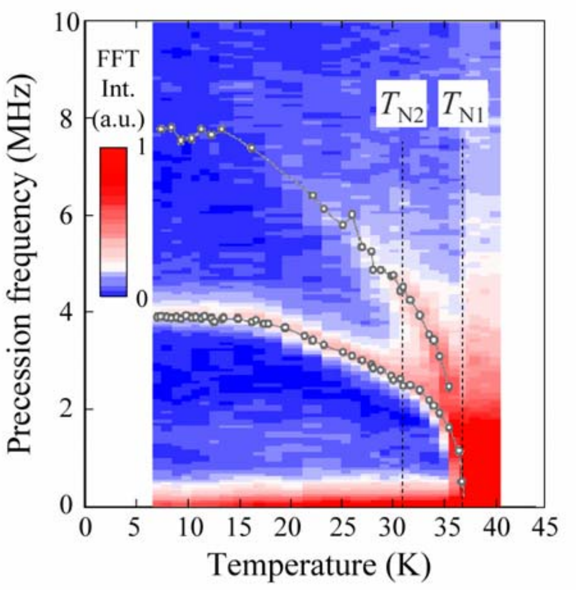


Figure: Temperature dependence of the precession frequency obtained by Fourier analysis. Open circles indicate the peak center frequency.

Publications

1) "μSR study of the spin-lattice cooperative phenomenon of $RbCoBr_3$", T. Kawamata *et al.*, RIKEN Accel. Prog. Rep **42**, 243 (2009)

High-Pressure μSR Studies of Molecular-Based Materials

Abstract

Magnetic properties of molecular based materials have been investigated by means of ambient- and high-pressure μSR measurements. In the case of an organic metal (DMe-DCNQI)$_2$Cu, pressure-induced magnetic ordering has been revealed and pressure-temperature phase diagram is established. We also developed a high-pressure experimental technique.

Achievement

An organic metal, (DMe-DCNQI)$_2$Cu (DMe-DCNQI = 2,5-dimethyl-DCNQI), shows an unusual pressure effect. The hybridization between the wide 1D 2*pπ* bands and the narrow 3*d* bands is a key factor in understanding such unconventional electronic properties of this compound. At ambient pressure, this material shows metallic behavior down to 450 mK. Peculiar to (DMe-DCNQI)$_2$Cu, an insulating phase is induced by the application of pressure higher than 100 bar. This unusual *P-T* phase diagram can be reproduced by the chemical pressure effect using selectively deuterated compounds. The fully deuterated sample of (DMe-DCNQI)$_2$Cu, in which the chemical pressure corresponds to 512 bar, exhibits the antiferromagnetic ordering below 8 K.

Recently, we have developed a high-pressure μSR setup for the RIKEN-RAL Muon Facility and successfully observed a sign of pressure-induced magnetic ordering of (DMe-DCNQI)$_2$Cu, which was predicted by the chemical pressure study, using this high-pressure setup.

Figure shows typical zero-field μSR time spectra at an actual pressure of 500 bar. At a low-temperature of 2 K, significant decrease of initial asymmetry due to static magnetic ordering is recognized. This decrease of the asymmetry is observed below 8 K, which indicates this compound is an antiferromagnet with T_N = 8 K. This T_N value is consistent with the chemical pressure study.

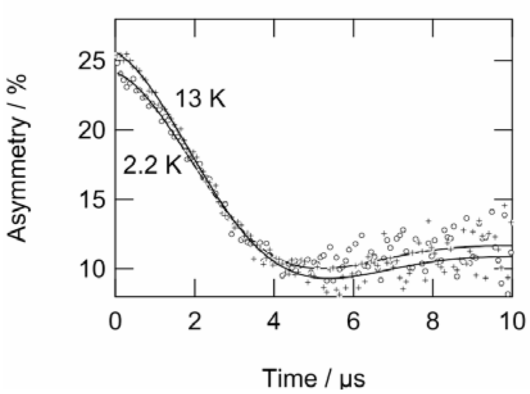


Figure: Zero-field μSR time spectra of (DMe-DCNQI)$_2$Cu at 500 bar for selected temperatures.

Publications

1) "High pressure magnetic study on a molecular conductor, (DMe-DCNQI)$_2$Cu", Y Ishii et al., RIKEN Accel. Prog. Rep. **42**, 254 (2009)

μSR Study of Structure Dependent Electron Radical Dynamics in Poly(3-alkylthiophene)

Abstract

Longitudinal field muon-spin-relaxation (LF-μSR) measurements have been performed for poly(3-alkylthiophene) to elucidate directly the intra- and inter-chain hopping mechanisms. The present results have revealed the remarkable shift of relative dominance between the intra- and inter-chain charge transport which is depending on their regio-regularity and side chain length.

Achievement

LF dependences of the muon-spin depolarization rate (λ_1) in regio-regular (RR) and regio-random (Rdm) poly(3-hexylthiophene) (P3HT) and RR-poly(3-octylthiophene) (RR-P3OT) show $H^{-0.5}$ field dependent characteristic of intra-chain diffusion in low temperatures which is turns over to inter-chain diffusion as characterized by its field-dependence of λ_1 of C-$H^{0.5}$ curve. The initial sign of change was suggested to be around the low temperature of 25 K, 50 K and 50 K for RR-P3HT (b), Rdm-P3HT (c) and RR-P3OT (d), respectively. In the P3HT samples, it is apparent that inter-chain diffusion process requires the assistance of higher temperature for regio-random system which may be related to different values of bandgap between them. The regio-regular structure is known to have a small bandgap (1.7 eV) which is 0.4 eV smaller than that of the regio-random structure. With the smaller bandgap, thermal excitation energy needed to support the inter-chain charge transport is supposedly smaller. Comparison in the difference side chain length of the alkyl between RR-P3HT and RR-P3OT, it found that inter-chain polaron diffusion process in RR-P3OT, requires the assistance of higher temperature. It may nonetheless be related to the difference distance between the chains. Clearly, longer side chain leads to larger distance between the chains which imply in turn the need of large thermal energy to support the inter-chain hopping process.

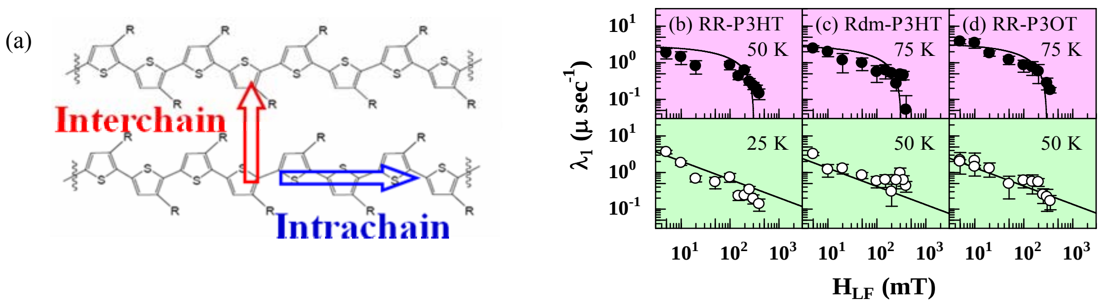


Figure: The scheme of direction of charge motion intra-chain and inter-chain (a) and LF dependences of depolarization rate (λ_1) in RR-P3HT (b), Rdm-P3HT (c) and RR-P3OT(d).

Publications

1) " Intra- and Inter-Chain Polaron Diffusion in Regio-random Polythiophene Studied by Muon Spin Relaxation ", Risdiana et al., Physica B doi:10.1016/j.physb.2010.01.080 (2010).

Muons for Spintronics: the New Muonium Method Detecting Conduction Electron Spin Polarization (CESP) in n-type GaAs

Abstract

The spin-dependent exchange scattering between an electron in a triplet-state muonium (Mu) and spin-polarized conduction electrons has been observed in Si doped n-type GaAs under low temperature. This new measurement technique could be applied to other important semiconductors, such as Si, Ge, and C, to study the behavior of their electron spin, where the traditional optical method could not be applied because of the weak spin-orbit coupling.

Achievement

As shown in Fig. 1, the circularly polarized laser light photoexcites the conduction electron spin throughout the sample by the below bandgap excitation. The muons implanted from the other side of the sample forms the Mu, which then interacts with the CESP by the spin exchange scattering. Since the muon asymmetry signal from the singlet Mu disappears immediately, whereas one from the triplet Mu stays the same, the induced CESP should give us a different μSR time spectrum depending on the direction of the CESP. The typical μSR spectrum has a sharp drop at the timing of the laser illumination due to the additional singlet Mu formed by interaction with the photoexcited electrons with their spin oriented anti-parallel to the muon spin. If the laser light is circularly polarized, the μSR spectra show additional small difference, depending on the light helicity (i.e. the direction of the CESP), as shown in Fig. 2. This effect has been confirmed by changing the temperature and pump light intensity so that our results are consistent with the previous works on the same material.

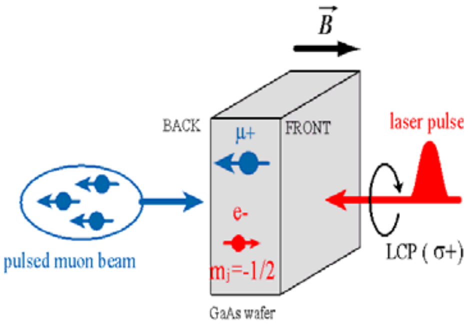


Fig. 1: Schematic view of the laser-μSR experiment. "LCP" stands for "Left Circularly Polarized".

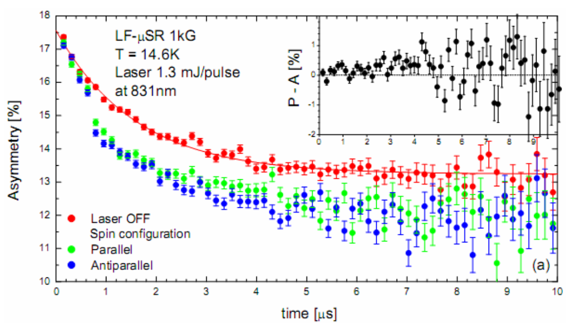


Fig. 2: μSR time spectrum. The inset shows the difference of spin parallel (green circles) and anti-parallel (blue circles) configuration.

Publications

1) "Muons for spintronics: Photo-induced conduction electron polarization in n-type GaAs observed by muonium method", K. Yokoyama, K. Nagamine, K. Shimomura, H.W.K. Tom, R. K. Kawakami, P. Bakule, Y. Matsuda, F.L. Pratt and E. Torikai, Physica B **404**, 856-858 (2009).

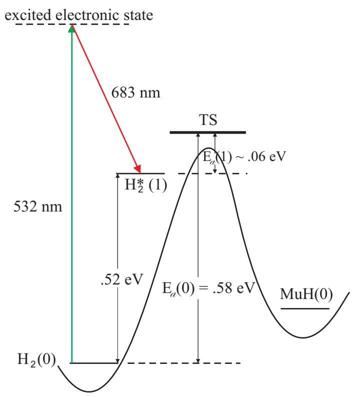
New Measurements of the Chemical Reaction Rate of Muonium with Stimulated Raman-Pumped H_2*(v=1)

Abstract

The reaction rate of Mu+H_2 gives a rigorous test of the chemical reaction rate theory because a highly accurate H_3 potential energy surface is available. We used stimulated Raman pumping (SRP) to produce H_2 in its first vibrational state H_2*(v=1) and measured, for the first time, the reaction rate of Mu + H_2*(v=1) -> MuH + H.

Achievement

We used the 2nd harmonic output of a Nd:YAG laser (532 nm) to pump the first vibrational state H_2*(v=1) (see bottom left figure). In the bottom right figure of the difference spectrum of μSR, the muonium precession amplitude is increasing with time because the precession dumps faster with laser ON compared with laser OFF (thus the observed phase is reversed compared with the raw MuSR spectra). We obtained the muonium reaction rate from the difference in the dumping rate. The obtained reaction constant k_{Mu} = 10.7+-2.4 x 10^{-13} cm^3s^{-1} is in excellent agreement with theory 9.8 x 10^{-13} cm^3s^{-1}. This enhancement of as much as 8 orders of magnitudes compared with the rate from H_2 ground state is due to the decreased barrier height. We are working on reducing the error.



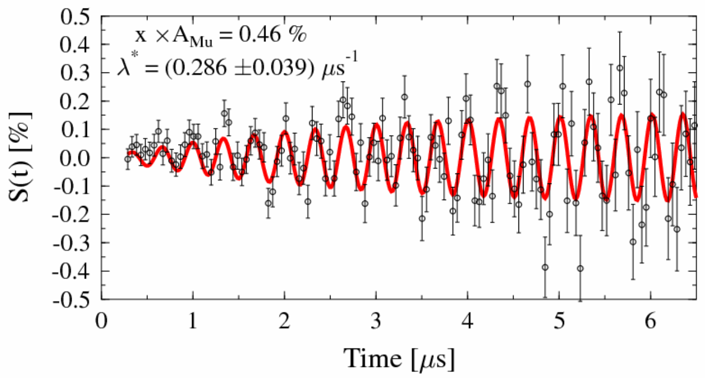


Figure: Scheme of Mu+H_2 reaction and laser excitation (left) and the difference μSR signal with laser OFF subtracted from laser ON (right)

Publications

1) "Toward the First Study of Chemical Reaction Dynamics of Mu with Vibrational-State-Selected Reactants in the Gas Phase: the Mu+H_2*(v=1) Reaction by Stimulated Raman Pumping", P. Bakule et al., Physica B 404, 5-7 (2009).

Domestic Collaborations for μSR on the Material Science

Abstract

We have been continuing to collaborate with more than 50 domestic research groups concerning the material science using μSR. On the basis of these collaborations we have produced more than 170 papers and grown more than 20 master-course students and 10 doctor course students.

Achievement

Figure shows a map of collaborations on the basis of domestic activities at the RIKEN-RAL Muon Facility. We have been collaborating with more than 50 groups in Japan. Those collaborations have created more than 170 papers in a wide range of the material science. Also we have grown master-course students and doctor-course students through those collaborations. We have grown up new users of μSR from the zero-base level and made user cores in several universities. Those new user cores are now important as core groups who can support μSR activities in the J-PARC in near future.

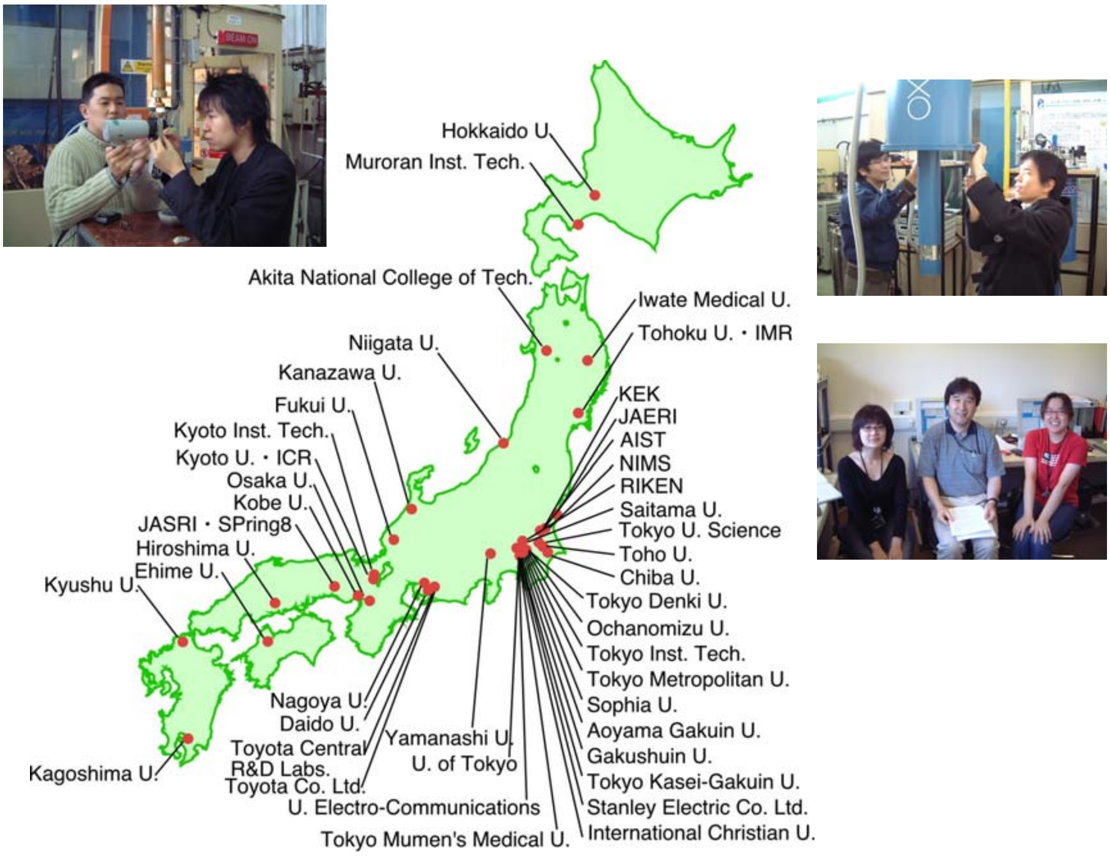


Figure: Domestic collaboration map with more than 50 groups for the material science.

Publications

See the publication list at the end of this report.

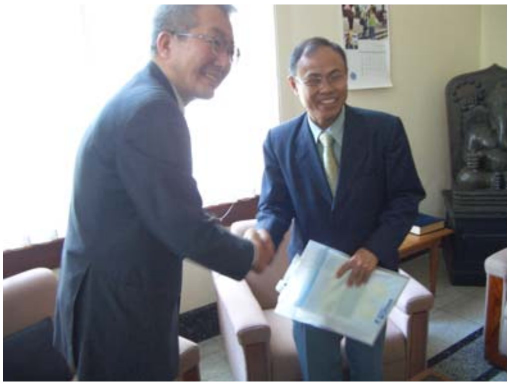
International Collaborations for μSR on the Material Science and Creation of New Activities of μSR in Asian Areas

Abstract

We have collaborated with 8 foreign research groups concerning the material science using μSR. In addition, we have made a Memory of Understandings (MOU) with three Indonesian universities on the basis of the material sciences using μSR at the RIKEN-RAL Muon Facility. .

Achievement

We have collaborated with 8 foreign research groups using μSR at the RIKEN-RAL Muon Facility for the material sciences. Recently, we are keen to create new μSR activities in the Asian area, because there has been no μSR core user in the Asian area except for Japan. On the basis of this direction of expansion of the μSR activity at the RIKEN-RAL Muon Facility, we have made MOU in 2008 with three Indonesian national universities, which are Institute Technology of Bandung (ITB), Padjadjaran University (UNPAD) and Institute Technology of Surabaya (ITS). Left-hand photo shows the sign-up ceremony with the former director of the Nishina Center, Dr. Yano, and the former rector of ITB, Prof. Santoso, shaking hands to celebrate MOU. Through this collaboration, researchers are being exchanged and symposiums are being organized. We are planning to expand these activities to other Asian countries aiming to organize Asian μSR activities on the basis of the RIKEN-RAL Muon Facility and J-PARC in the near future.



Left-hand photo: MOU signed by Dr. Yano (left) and Prof. Santoso (right).

Right-hand photo: Prof. Nugroho (right) from ITB enjoying μSR at the RIKEN-RAL Muon Facility with his student (left).

Publications

1) A.A. Nugroho *et al*., Physica B **404**, 785-788 (2009).

Development of a Gas-Pressurized High-Pressure Setup for μSR Experiments at the RIKEN-RAL Muon Facility

Abstract

A gas-pressurized high-pressure μSR setup for RIKEN-RAL has been developed under the collaboration between the RIKEN μSR group and the ISIS high-pressure group. The system is pressurized up to 6.4 kbar and cooled down to 2 K using the existing cryostat. The developed system is the world-wide ***FIRST*** high-pressure μSR system for the pulsed muon beam.

Achievement

A high-pressure μSR setup which is pressurized by gas He up to 6.4 kbar has been developed for the RIKEN-RAL Muon Facility. This work has been done under a close collaboration between RIKEN μSR group and the ISIS high-pressure group. The system can be cooled down to 2 K using the existing cryostat. The advantage of this system is that a homogeneous pressure can be applied to a sample from the room temperature down to 2 K and that the pressure can be changed smoothly from zero to the maximum without removing the sample from the high-pressure cell. Figure (a) shows the developed high-pressure cell and Figure (b) shows a high-pressure rotary pump and a gas intensifier. The gas He is pressurized up to 2.7 kbar using the high-pressure rotary pump and finally pressurized up to 6.4 kbar using the intensifier. This system is the ***FIRST*** high-pressure μSR system in the world for the pulsed muon beam. Thus, it is expected to open a new range of applications of μSR for material sciences.

(a)

(b)

Figure: (a) Developed pressure cell made by CuBe. (b)The high-pressure μSR setup. The high-pressure cell is connected to a high-pressure stick to introduce pressurized gas He.

Publications

1) I. Watanabe *et al.*, Physica B **404**, 993 (2009).

2) R. Done *et al.*, Proceedings of 12th International Conference on Pressure Vessel Technology (ICPVT-12), 329 (2009).

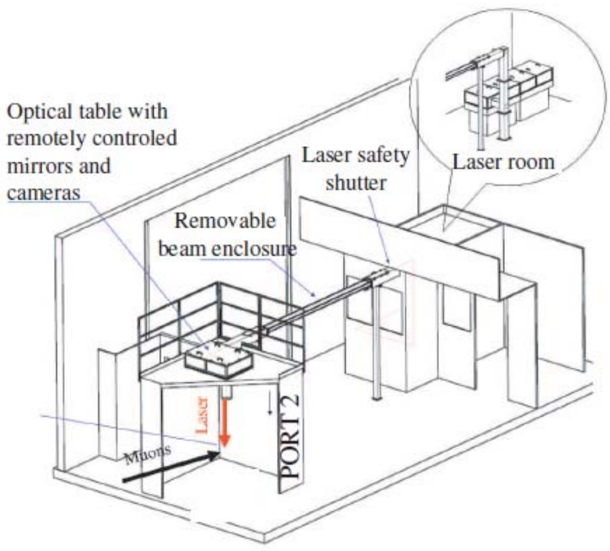
Development of New Laser System for Laser-Irradiated Pump-Probe Type μSR Experiments

Abstract

Use of laser pulses synchronized with muon implantation provides an extremely useful tool that extends the scope of μSR. A laser system for μSR setup has been developed at RIKEN-RAL.

Achievement

The laser irradiation will cause coherent electron excitation or ionization in the studied sample or even affect the muonium state directly. Additionally, circularly polarized light can induce spin polarization of the excited electrons in the sample. The effects of the pump laser pulse on the sample can then be sensitively probed using μSR technique. To allow routine use of such pump-probe technique we have built a dedicated laser room and laser beam delivery system next to the ARGUS μSR spectrometer (bottom left figure). The laser system was built by pooling equipment together in close collaboration between RIKEN, KEK, Yamanashi University, University of California and ISIS and is based on an optical parametric oscillator (OPO) pumped by a Nd:YAG laser. The output wavelength from OPO is tunable between 400 nm and 2500 nm. Six groups has already conducted μSR involving laser on topics such as spintronics in semiconductors and reaction dynamics of muonium with excited H_2 molecules (bottom right figure).



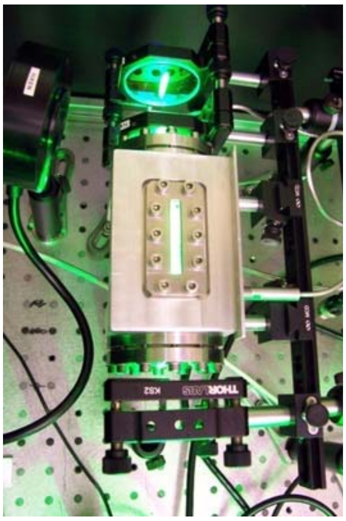


Figure: (Left) Layout of the laser enclosure and beam delivery to μSR sample, (Right) Gas H_2 chamber being pumped by 532nm laser light.

Publications

1) "Installation of a new laser system for laser-irradiated pump-probe type μSR experiments at RIKEN-RAL muon facility", P. Bakule et al., RIKEN Accel. Prog. Rep. **42**, 233 (2009).

Development of the New Multi-Channel Spectrometer (CHRONUS) for μSR Studies at Port-4, RIKEN-RAL

Abstract

A new multi-channel μSR spectrometer is newly developed at Port-4. The 606 fine segmented detectors and homogeneous magnetic field enable us to perform μSR experiments under various extreme conditions using the intense pulsed beam. The installation and the beam commissioning were almost completed and practical μSR experiments commence to operate.

Achievement

A research project to explore various matters under multiple extreme conditions combined with μSR technique are going on. In order to promote the project more intensively and efficiently, a high performance and multi-channel spectrometer named ***CHRONUS*** is newly installed at Port-4, which enables us to perform experiments in parallel at Port-2 and Port-4.

We employed new technologies for the spectrometer: magnets with good field homogeneity (<0.1%) (Fig.1) and with a large gap of 150mm, the 606 highly segmented and direction-sensitive μ-e counters (Fig.2), the counter mold (Fig.2 top) and frame, fiber light guides (Fig2 bottom), multi-anode photomultiplier tubes covered with magnetic field shields (Fig.1) and a new data acquisition system (Fig.3). At present, Beam commissioning is in progress to prove availability for practical μSR measurements. We are going to start operation in 2010.

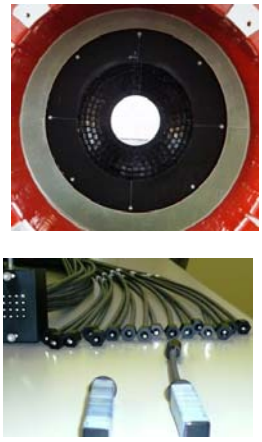


Figure 1. New spectrometer.

Figures 2. Counters, fiber light guides and counter mold.

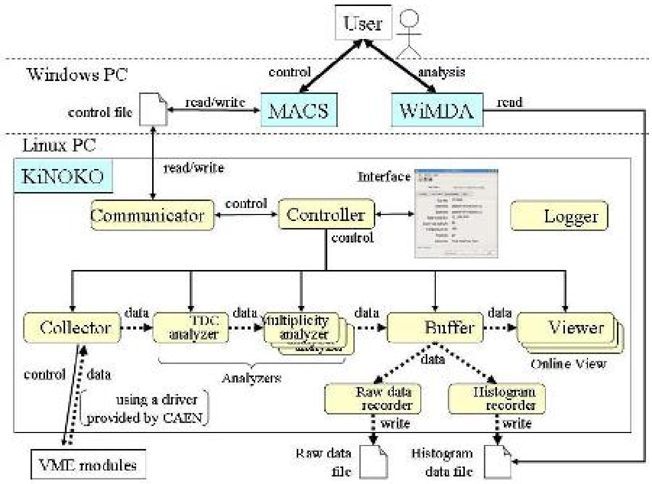


Figure 3 Block diagram of the data acquisition system.

Publications

1) "Development of new μ-e decay counters in a new multi-channel μSR spectrometer for an intense Pulsed muon beam", D. Tomono, et al., Nucl. Inst. Meth A **600**, 44 (2009).

Study of Beam Density Enhancement Effect with Tapered Tubes for Application to the Muon Beam-Line at RIKEN-RAL

Abstract

The beam density of 54 MeV/c muons can be increased almost by a factor of two when a tapered glass tube is inserted coaxially along with the muon beam. This opens a new technique to increase the muon intensity effectively.

Achievement

More effective and efficient use of the muon beam is currently one of the important issues for μSR studies and high density muonium generation at RIKEN-RAL. We are planning to employ the capillary method to focus the intense muon beam. In the first experiment at RIKEN-RAL, we observed beam density enhancement effect at 54 MeV/c when a tapered glass tube was inserted coaxially along with the muon beam as shown Fig.1. The muon beam was scattered on their inner wall surface toward its outlets, resulting in increase of the number of available muons almost by a factor of two compared with using a normal beam collimator. The tapered angle dependence, outlet diameter dependence and particle charge dependence are shown in Fig. 2 and Fig. 3 comparing with the Monte Carlo simulation with a Coulomb scattering model. These results suggest that enhancement is explained by this model reasonably and that its material dependence is expected when tapered tubes are made of heavy materials rather than glass tube due to the large coefficient of the Coulomb scattering. This observation shows the possibility to increase the number of available muons further by optimizing the inner shape of collimators. For practical application, it is necessary to know the details of the energy and angular distribution of outgoing muons. A dedicated measurement was done at TRIUMF and analysis is in progress. These experiments were performed by the collaboration between atomic physics laboratory and advanced meson science laboratory.

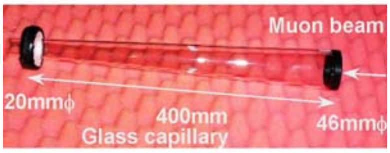


Figure 1 One of the glass capillaries

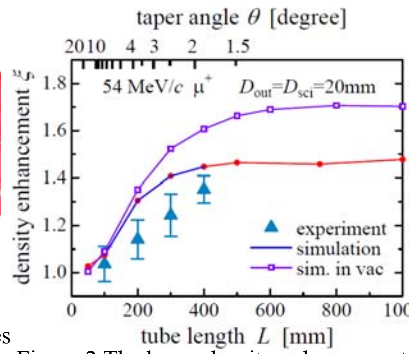


Figure 2 The beam density enhancement as a function of the tube length.

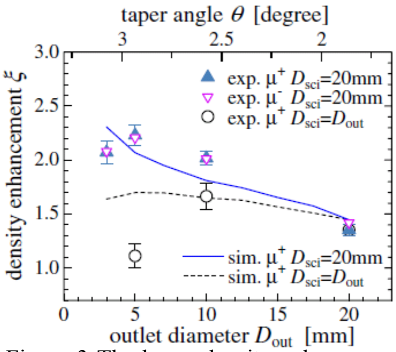


Figure 3 The beam density enhancement as a function of the outlet diameter D_{out}.

Publications

1) "Density Enhancement of Muon Beams with Tapered Glass Tubes", T M. Kojima, D. Tomono, T. Ikeda, K. Ishida, Y. Iwai, M. Iwasaki, Y. Matsuda, T. Matsuzaki, Y. Yamazaki, J. Phys. Soc. Jpn., **76**, 093501(2007).

Development of an Ultra-Cold Muon Beam for the New Muon g-2 Measurement

Abstract

Measurement of the muon's anomalous magnetic moment gives one of the most rigorous tests of the Standard Model of particle physics. We started a project to improve its precision using an ultra-cold muon beam. We first plan an increase of the muon intensity by two orders of magnitude with developments of muonium production targets, muonium ionizing laser and muon acceleration.

Achievement

We have started, in collaboration with KEK and other laboratories, a project to measure the muon g-2 to 0.1ppm precision. An ultra cold muon beam is a key for the success of the measurement. We had been developing an ultra slow muon beam as a tool for material science. To fulfill severer requirements for its application to muon g-2, several new developments are planned this year.

1) In order to produce an ultra-cold muon beam with small enough transverse momentum spread so it can be stored in the muon g-2 storage ring, we will utilize a muonium production target at room temperature instead of the 2100 K tungsten target we had been using. Silica-powders are known to produce similar yield of thermal muonium. We will study silica aerogels and nano-channeled targets as well. We will select the best target utilizing the muonium position measurement by positron tracking with the d.c. muon beam at TRIUMF.

2) We are collaborating with the RIKEN laser group to increase the Lyman-α laser intensity from 1 μJ/pulse to 100 μJ/pulse. Thus we will increase the ionization efficiency by two orders of magnitude. Manufacturing of the laser is in progress at RIKEN.

3) We are to adopt a new muon acceleration scheme based on the electron microscopes design so as not to heat the ultra-cold muon beam during acceleration. In addition, we plan a pulsed acceleration in the first stage so the field gradient does not increase the muon energy spread much.

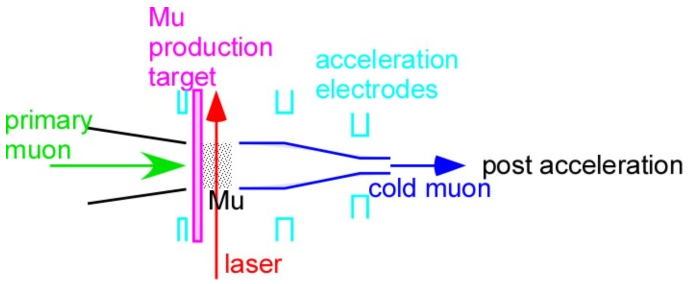


Figure: Schematic of the ultra-cold muon source

Publications

1) "An Experimental Proposal on a New Measurement of the Muon Anomalous Magnetic Moment g-2 and Electric Dipole Moment at J-PARC", N. Saito (Contact person), M. Iwasaki (Co-contact person) et al., Proposal P34 submitted to the 9th J-PARC NPP PAC meeting, Tsukuba, Jan 2010.

Mössbauer spectroscopy

The condensed matter physics using Mössbauer spectroscopy is rather new subject in the Advanced Meson Science Laboratory. Previously, Mössbauer spectroscopy was one of the subjects of Applied Nuclear Physics Laboratory initiated by a chief scientist Koichiro Asahi. In 2007, He resigned from RIKEN to concentrate Professorship in Tokyo Institute of Technology.

Because the Mössbauer spectroscopy is unique tool to study the property of condensed matter, giving complementary to μSR, so that it is one of the important subjects in Nishina Center. In addition, our group has developed on-line Mössbauer spectroscopy using a RI-beam produced in RIKEN-RIBF. It was the first application of the RI-beam to Mössbauer spectroscopy. It can be possible to observe the dynamic behaviors and the meta-stable states of located atoms in any condensed matter by in-beam Mössbauer spectroscopy. To maintain the activity, the Mössbauer group merged to the Advanced Meson Science Laboratory.

3.2.3.1 Individual topics of the Mössbauer spectroscopy

In-beam Mössbauer Spectroscopy of ^{57}Mn Implanted into Al_2O_3 and MgO

Abstract

Room-temperature ferromagnetism has been reported in some non-magnetic and semiconductive oxides, like Al_2O_3, MgO and ZnO, including the trace magnetic transition-metals. It is suggested that the vacancies in non-magnetic oxides play an important role in the occurrence of ferromagnetism, but the origin of magnetism has not been understood yet. To this end, the ^{57}Mn implantation Mössbauer spectroscopy was applied to clarify the occupation sites of the trace Fe atoms in Al_2O_3 and MgO.

Achievement

The ^{57}Mn beam was produced by the nuclear projectile fragmentation of ^{58}Fe accelerated at 500 MeV/nucleon bombarding to a Be target, and was simultaneously implanted into a sample after passing through degraders. The 14.4 keV Mössbauer γ-rays emitted from ^{57}Mn were detected by a parallel-plate avalanche counter (PPAC) combined with a plastic scintillation β-veto counter.

Figure 1 shows In-beam ^{57}Fe Mössbauer spectrum of implanted ^{57}Mn into MgO at room temperature. The spectrum could be analyzed with *Singlet-1* ($\delta = -0.91$ mm/s), *Doublet-1* ($\delta = -0.57$ mm/s, ΔE_Q = 0.77 mm/s) and *Doublet-2* ($\delta = -0.61$ mm/s, ΔE_Q = 2.15 mm/s), from the results of *ab initio* electron density calculations (see Fig.2). *Singlet-1* was assigned to high-spin Fe^{2+} at substitutional position of Mg atom. *Doublet-1* and *Doublet-2* are assigned to be Fe atoms with the neighboring O vacancies and those with the neighboring Mg vacancies, respectively.

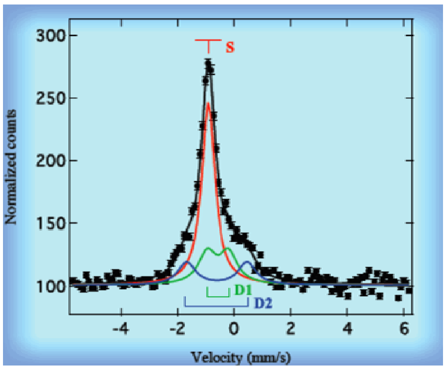


Figure 1: In-beam ^{57}Fe Mössbauer spectrum of implanted ^{57}Mn into MgO at R.T.

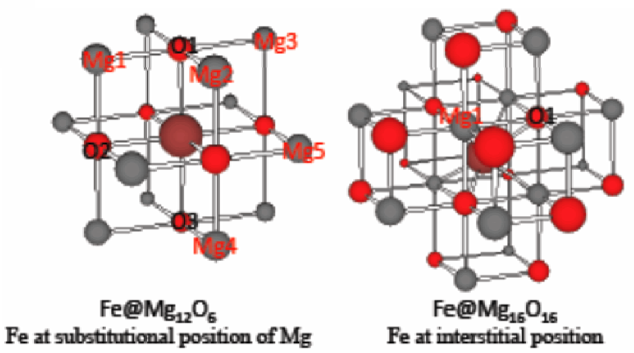


Figure 2: Cluster models of MgO(<u>*Fe*</u>) for electron density calculations.

References

1) T. Nagatomo *et al.*, "In-beam Mössbauer Spectroscopy of ^{57}Mn Implanted into Aluminum Oxide" and "In-beam Mössbauer Spectroscopy of ^{57}Mn Implanted into Magnesium Oxide", in *Asia-Pacific Symposium of Radiochemistry*, PO-2-124/125, Napa (USA), Nov. (2009).

Development of Detector System for ^{57}Mn Implantation Mössbauer Studies

Abstract

The detection system for ^{57}Mn implantation Mössbauer studies was improved by using an anticoincidence method where a thin plastic scintillation counter was set between the detector and a sample in order to reject the β rays from ^{57}Mn. ^{57}Mn implantation Mössbauer spectrum with sufficient signal-to-noise (S/N) ratio that is about 20 times higher than that in previous measurements was successfully obtained.

Achievement

The on-line Mössbauer spectroscopy using ^{57}Mn as an radioisotope (RI) beam is considered to be one of the most powerful techniques to obtain *atomistic* information concerning the final lattice positions, valence states, and dynamic behavior of localized Fe atoms in materials. However, there still remained a significant problem that the β rays emitted from ^{57}Mn nuclei much degraded a S/N ratio of the spectra, because the Mössbauer detector system has poor energy resolution to discriminate the conversion electrons emitted by Mössbauer effect from the incoming β rays.

The detector system was improved by using an anticoincidence method where a thin plastic scintillation counter was set between the Mössbauer γ-ray detector and a sample in order to reject the β rays from ^{57}Mn (see Fig.3). The implantation Mössbauer spectrum with sufficient resonance that is about 20 times higher than that in previous measurements was successfully obtained (see Fig.4).

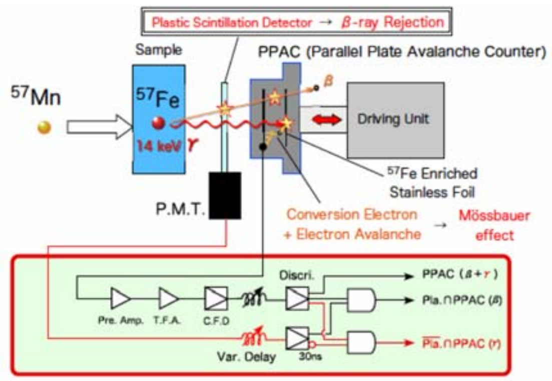


Figure 3: Schematic layout of the anticoincidence method for the ^{57}Mn implantation Mössbauer measurement

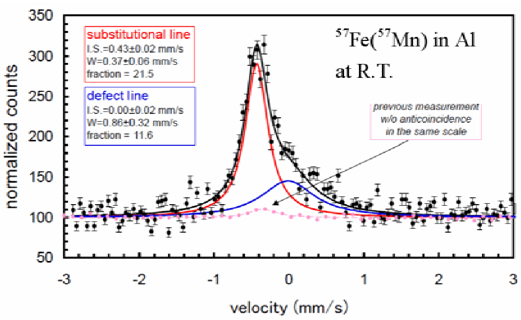


Figure 4: In-beam ^{57}Fe Mössbauer spectrum of implanted ^{57}Mn into Al at R.T. *Pink* shows the previous result without anticoincidence method.

Reference

1) T. Nagatomo *et al.*, "Improvement of Signal-to-Noise Ratios in ^{57}Mn Implantation Mössbauer Spectroscopy", in *Asia-Pacific Symposium of Radiochemistry*, 14-S12-6, Napa (USA), Nov. (2009).

^{99}Ru and ^{61}Ni Mössbauer Spectroscopic Studies Using RIKEN AVF Accelerator

Abstract

Ru and Ni are important constituent elements of a wide variety of compounds, including oxides, catalysts, and functional materials in solar butteries and shape-memory alloys. ^{99}Ru and ^{61}Ni Mössbauer spectroscopy can reveal important information about the physical and chemical properties of these compounds. We have developed irradiation equipment for these Mössbauer sources at RIKEN AVF accelerator and an off-line measurement system at low temperatures.

Achievement

The Mössbauer source nuclides, ^{99}Rh ($T_{1/2}$=15.0 d) for ^{99}Ru Mössbauer spectroscopy and ^{61}Cu ($T_{1/2}$=3.4 h) for ^{61}Ni Mössbauer studies, were produced *via* ^{99}Ru(p,n)^{99}Rh and ^{58}Ni(α,p)^{61}Cu reactions at RIKEN AVF cyclotron in RNC. ^{99}Ru Mössbauer spectroscopy were applied to the studies of $CaRuO_3$, $Hg_2Ru_2O_7$ and Ru-containing skutterudites, in addition of ^{61}Ni Mössbauer studies of NiO catalysts.

^{61}Ni Mössbauer spectra have been obtained by a new technique using synchrotron radiation at SPring-8 and ESRF. Moreover, short-lived RI beam implantation methods will be available for studying of these elements. Conventional methods that use Mössbauer sources produced by nuclear reactions play a complementary role to these sophisticated Mössbauer techniques, but they remain the important Mössbauer measurement technique.

Publications

1) Y. Kobayashi, *J. Phys.*, “^{99}Ru and ^{61}Ni Mössbauer Spectroscopic Studies Using the Accelerator at RIKEN”, *in press*.

2) A. Koriyama　M. Ishizaki, T. C. Ozawa, T. Taniguchi, Y. Nagata, H. Samata, Y. Kobayashi, and Y. Noro: “Magnetism of $CaRuO_3$ crystal”, *J. Alloys Compounds*, **372** (2004) 58-64.

3) S. Tsutsui, J. Umemura, H. Kobayashi, T. Tazaki, S. Nasu, Y. Kobayashi, Y. Yoda, H. Onodera, H. Sugawara, T. D. Matsuda, D. Kikuchi, H. Sato, C. Sekine and I. Shirotani: “Elastic Properties of Filled-Skutterudite Compounds Probed by Mössbauer Nuclei”, *Hyperfine Interact.*, **168** (2006) 1073-1077.

4) S. Tsutsui, Y. Kobayashi, T. Okada, H. Haba, H. Onodera, Y. Yoda, M. Mizumaki, H. Tanida, T. Uruga, C. Sekine, I. Shirotani, D. Kikuchi, H. Sugawara, and H. Sato: “A Possible Novel Magnetic Ordering in $SmRu_4P_{12}$”, *J. Phys. Soc. Jpn.*, **75** (2006) 0937031-4.

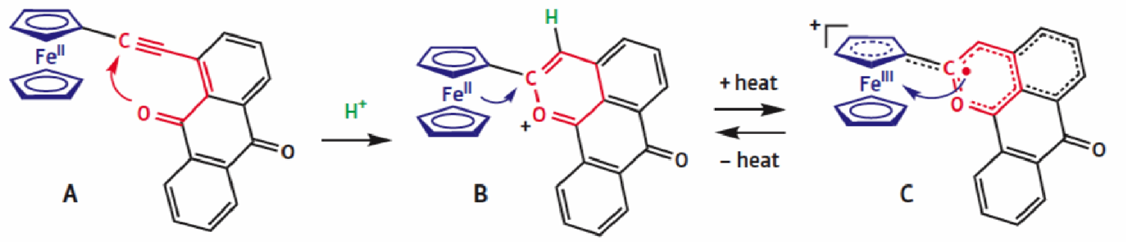
Applications of ^{57}Fe Mössbauer Spectroscopy to Inorganic Chemistry

Abstract

Chemical compounds that can be converted between two states with different physical properties are promising building blocks for molecular devices. If this process can be triggered with an external stimulus such as heat or light, it can be controlled remotely and integrated into a functional system. One method of introducing bistability into a material is to exploit valence tautomerization. We developed a new class of compounds exhibiting this type of behavior, and devised a novel chemical reaction to make cyclic structures that can switch between different valence isomers..

Achievement

As the figure below indicates, when the molecule is treated with a strong organic acid (H^+), a cyclization reaction occurs in which a bond forms between the carbon and oxygen atoms (Figure A). As a result of this process, a larger region of alternating singe and double bonds, that is a π-conjugated system, is created. The Fe ion in the ferrocene group is able to transfer one of its electrons to the ring and is oxidized from Fe(II) to Fe(III) (Figure B and C). The donated electron can hop back to the ferrocene group to reform the compound B. The reorganization of the electronic structure depends on temperature; the structure in compound C is favored as it increases from 12 to 290 K.



Publications

1) M. Kondo, M. Uchikawa, W. W. Zhang, K. Namiki, S. Kume, M. Murata, Y. Kobayashi, and H. Nishihara: "Protonation-Induced Cyclocondensation of 1-Aryl Ethynylanthraquinones: Expanding the p Conjugation", *Angewandte Chemie International Edition*, **46** (2007) 6271-6274.

2) M. Kondo, M. Uchikawa, K. Namiki, W. Zhang, S. Kume, E. Nishibori, H. Suwa, S. Aoyagi, M. Sakata, M. Murata, Y. Kobayashi, and H. Nishihara: "Counterion-Dependent Valence Tautomerization of Ferrocenyl-Conjugated Pyrylium Salts", *J. Am. Soc. Chem.*, **131** (2009) 12112-12124.

3.3. Record of Members

Current members (as of January 1, 2010).

	Number	Name
Research Staff (permanent position)	9	IWASAKI Masahiko MATSUZAKI Teiichiro ISHIDA Katsuhiko KOBAYASHI Yoshio OUTA Haruhiko WATANABE Isao ITAHASHI Kenta OHNISHI Hiroaki SAKUMA Fuminori
Special/Foreign Postdoctoral Researchers	3	OHISHI Kazuki IIO Masami RISDIANA
Research Staff (contract)	8	SUZUKI Takao KOIKE Takahisa KAWAMATA Takayuki ISHII Yasuyuki TSUKADA Kyo MIZUNO Katsuya TOMONO Dai YOKOYAMA Koji
Research Collaborative Advisors	4	ITO Atsuko AKAISHI Yoshinori YAMAZAKI Toshimitsu KAMIMURA Masayasu
Visiting Researchers	2	YAGI Eiichi NAGATOMO Takashi
Visiting Researchers/Technicians (Lab. Outside)	128	
Junior Research Associates	3	ITO Satoshi HIRAIWA Toshihiko FUJIWARA Yuya
Student Trainees	3	TOKUDA Makoto KOU Hiroshi SATAKE Manami
Student Trainees (Lab. Outside)	35	
Assistants	2	SATO Junko FUJITA Yoko

History

Research staff (permanemt position)

Name	2002	2003	2004	2005	2006	2007	2008	2009	move to
IWASAKI Masahiko	→	→	→	→	→	→	→	→	
MATSUZAKI Teiichiro	→	→	→	→	→	→	→	→	
ISHIDA Katsuhiko	→	→	→	→	→	→	→	→	
KOBAYASHI Yoshio						→	→	→	
OUTA Haruhiko		→	→	→	→	→	→	→	
WATANABE Isao	→	→	→	→	→	→	→	→	
ITAHASHI Kenta	→	→	→	→	→	→	→	→	
OHNISHI Hiroaki				→	→	→	→	→	
SAKUMA Fuminori								→	
MATSUDA Yasuyuki	→	→	→	→	→	→			AssociateProfessor Univ.of Tokyo
Sum	6	7	7	8	8	9	8	9	

Special/Foreign Postdoctoral Researchers

Name	2002	2003	2004	2005	2006	2007	2008	2009	move to
OHISHI Kazuki							→	→	
IIO Masami							→	→	
RISDIANA							→	→	
OKAMOTO Satoshi	→								PD, Univ. of Columbia (USA)
YAMASE Hiroyuki	→								Special PD Researcher Takagi Lab.
OHIRA Seiko	→								Contract Researcher Iwasaki Lab.
KOIKE Takahisa		→	→	→					Contract Researcher Iwasaki Lab.
OKADA Shinji			→	→	→				Contract Researcher Iwasaki Lab.
NEMURA Hidekatsu				→	→	→			Contract Researcher Hiyama Lab.
SUZUKI Takatoshi				→	→	→			Assistant Professor Univ.of Tokyo
TOMONO Dai				→	→	→	→		Contract Researcher Iwasaki Lab.
SAKUMA Fuminori						→	→		Researcher Iwasaki Lab.
FUJIOKA Hiroyuki							→		Assistant Professor Kyoto Univ.
Sum	3	1	2	5	4	4	6	3	

Contract Researchers

Name	2002	2003	2004	2005	2006	2007	2008	2009	move to
SUZUKI Takao				→	→	→	→	→	
KOIKE Takahisa					→	→	→	→	
KAWAMATA Takayuki					→	→	→	→	
ISHII Yasuyuki							→	→	
TSUKADA Kyo							→	→	
MIZUNO Katsuya							→	→	
TOMONO Dai				→			→	→	
YOKOYAMA Koji								→	
ITAHASHI Kenta	→								Researcher Iwasaki Lab.
STRASSER Patrick	→	→							Assistant Professor, KEK
OHIRA Seiko		→	→	→					PD Ochanomizu Univ.
BAKULE Pavel		→	→	→	→	→			Researcher Scientist ISIS, RAL(UK)
IIO Masami				→	→	→			Special PD Researcher Iwasaki Lab.
OKADA Shinji						→			PD LNF-INFN(Italy)
SATO Masaharu						→	→		PD Univ. of Tokyo
Sum	2	3	2	5	6	7	9	8	

Junior Research Associates

Name	2002	2003	2004	2005	2006	2007	2008	2009	move to
ITO Satoshi							→	→	
HIRAIWA Toshihiko							→	→	
FUJIWARA Yuya								→	
TOMONO Dai	→								Collaborated Researcher, KEK
TANAKA Hiroyuki	→	→							PD Univ. of California, Riverside
SATO Masaharu			→	→	→				Contract Researcher Iwasaki Lab.
HACHITANI Kenichi				→	→	→			Private cooperation
Sum	2	1	1	2	2	1	2	3	

Student Trainees

Name	2002	2003	2004	2005	2006	2007	2008	2009	move to
TOKUDA Makoto							→	→	
KOU Hiroshi								→	
SATAKE Manami								→	
OKADA Shinji	→	→							Special PD Researcher Iwasaki Lab.
YONEYAMA Tetsu	→								Private corporation
SUZUKI Takatoshi	→	→	→						Special PD Researcher Iwasaki Lab.
SATO Masaharu	→	→							JRA Iwasaki Lab.
KATAYAMA Takeshi	→	→							Private corporation
FUKUDA Yoshiyuki				→	→				Private corporation
HIRAYAMA Yuzo					→	→			Private corporation
HANAKI Toshio					→				Private corporation
TATSUNO Hideyuki					→				JSPS DC2
FUJIWARA Yuya						→	→		JRA Iwasaki Lab.
Sum	5	4	1	1	4	2	2	3	

Half of the researchers of Advanced Meson Science Laboratory are concurrently appointed in RIKEN-RAL branch (RRB) to perform muon science researches and the facility operation. The budget of this activity is mainly supported by operational budget from RIKEN, executed by the chief scientist and inspected also by RRB director Teiichiro Matsuzaki. Another half of the researchers are focusing on the hadron physics. The budget of this activity is mainly supported by the external competitive fund from MEXT / JSPS, executed by the chief scientist.

3.4. Record of Fundings

Fiscal year		2002	2003	2004	2005	2006	2007	2008	2009
Governent funding (thru RIKEN)	Laboratory funding	15,800	12,440	82,130	50,180	110,950	67,498	47,150	55,150
	RIKEN -RAL funding (annual operating	280,522	252,135	205,224	205,224	205,224	205,224	194,977	175,479
Research grants		4,650	18,800	31,600	31,000	75,840	108,660	97,610	23,500
Commissioned research funding		420	0	0	0	0	0	0	300
Others		0	0	0	0	0	4,545	0	0
		303,394	285,378	320,958	288,409	394,020	387,934	341,745	256,438

3.5. Research Outputs

Year		2002	2003	2004	2005	2006	2007	2008	2009
Publication	International	26	37	40	40	56	47	55	64
	Domestic	0	0	1	3	0	0	2	0
Oral presentation	International	12	13	18	47	32	35	35	26
	Domestic	9	12	14	23	37	39	31	24
Patent Application	International	0	0	0	0	0	0	0	0
	Domestic	0	0	0	0	0	0	0	0

3.5.1. Original papers

2010

1. Ishii Y., Nagasawa M., Suzuki T., Watanabe I., Matsuzaki T.,Yamamoto H.M., and Kato R.,
"Zero-Field and Longitudinal-Field μSR Studies of Quasi-One-Dimensional Organic Conductor, $TMTTF_2PF_6$",
Physica B (in press)

2. Risdiana . ,Fitrilawati . ,Siregar R. ,Hidayat R.,Nugroho A. A. ,Tjia M. ,and Watanabe I.:
"Intra and Inter Chain Polaron Diffusion in Regio-random Polythiophene Studied by Muon Spin Relaxation",
Physica B (in press) *

3. Risdiana .. ,Adachi T. ,Oki N. ,Koike Y. ,Suzuki T. ,and Watanabe I. :
"Muon-Spin-Relaxation Study of the Cu-Spin Dynamics in Electron-Doped High-T_C Superconductor $Pr_{0.86}LaCe_{0.14}Cu_1$-yZn_yO_4",
Phys. Rev. B (in press) *

4. Risdiana .. ,Fitrilawati .. ,Siregar R. ,Hidayat R. ,Nugroho A. A. ,Tjia M. ,Ishii Y. ,and Watanabe I. :
"Field and Temperature Dependent Charge Transport Characteristics in Regio-regular Poly(3-octylthiophene-2,5-diyl) Studied by Muon Spin Relaxation",
Journal of Physics: Conference Series (in press)

5. Kawamata T. ,Kaneko N. ,Uesaka M. ,Koike Y. :
"Enhancement of Thermal Conductivity due to Spinons in the One-Dimensional Spin System $SrCuO_2$",
Journal of Physics: Conference Series (in press).

6. Uesaka M. ,Kawamata T. ,Kaneko N. ,Sato M. ,Kudo K. ,Kobayashi N. ,Koike Y. :
"Thermal Conductivity of the Quasi One-Dimensional Spin System $Sr_2V_3O_9$",
Journal of Physics: Conference Series (in press).

7. Sato M. ,Kawamata T. ,Sugawara N. ,Kaneko N. ,Uesaka M. ,Kudo K. ,Kobayashi N. ,Koike Y. :
"Thermal Conductivity in the Bose-Einstein Condensed State of Triplons in the Bond-Alternating Spin-Chain System $Pb_2V_3O_9$",
Journal of Physics: Conference Series (in press)

8. Sugiyama J., Mukai K., Ikedo Y., Nozaki H.,Mansson M, and Watanabe I,
"A Novel Tool for Detecting Li Diffusion in Solids Containing Magnetic Ions; μ^+SR Study on Li_xCoO_2",
Journal of Physics: Conference Series (in press)

9. Suzuki T., Watanabe I., Yamada F., Yamada M., Ishii Y., Kawamata T., Goto T., and Tanaka H.,
"Pressure-Induced New Magnetic Phase in $TlCu_{0.985}Mg_{0.015}Cl_3$ Probed by Muon Spin Rotation",
Journal of Physics: Conference Series (in press).

10. Tabata Y., Kajinami Y., Waki T., Watanabe I., and Nakamura H., "
μSR Study on the Spin Singlet State in the S = 1/2 Cluster Magnet $GaNb_4S_8$",
Journal of Physics: Conference Series (in press)

11. Kikuchi H., Fujii Y., Watanabe I., Suzuki T., Kawamata T., Amato A., Azuma M., and Shimakawa Y.,
"Magnetic Order of the Frustrated Triangular Lattice Antiferomagnet $InMnO_3$ Studied by μSR",
Journal of Physics: Conference Series (in press).

12. Suzuki T., Watanabe I., Yamada F., Ishii1 Y., Ohishi K., Risdiana, Goto T., and Tanaka H.,
"Pressure Effect on Magnetic Ground States in $TlCu_{1-x}Mg_xCl_3$ with x = 0.015 Probed by Muon-Spin-Rotation",
Journal of Physics: Conference Series (in press).

2009

13. Risdiana .. ,Fitrilawati .. ,Hidayat R. ,and Watanabe I. :
"μSR study of structure dependent electron radical dynamics in polythiophene and its derivative",
RIKEN-RAL Muon Facility Report 8 (2008), 53--53 (2009).

14. Yamazaki T. ,Sato M. ,and Ito S. :
"Discovery of spontaneous deformation of Pd metal during hydrogen absorption / desorption cycles",
Proc. Jpn. Acad., Ser. **B 85**, No. 5, pp.183--186 (2009)]

15. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. ,Fujiwara K. , Fukao Y. ,Goto Y. ,Gross P. M. ,Horaguchi T. ,Ichihara T. ,Imai K. ,Inoue Y. ,Ishihara M. ,Jinnouchi O. , Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. ,Kiyomichi A. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. , Nakano K. ,Onishi H. ,Okada H. ,Okada K. ,Rykov V. L. ,Saito N. ,Shibata T. ,Shoji K. ,Tabaru T. , Taketani A. ,Tanida K. ,Togawa M. ,Tojo J. ,Torii H. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"Dilepton mass spectra in p+p collisions at sqrt(s_{NN}) = 200 GeV and the contribution from open charm",
physics letter **B 670**, 313—320 (2009). *

16. Bazzi M., Beer G., Bombelli L., Bragadireanu A.M., Cargnelli M., Corradi G., Curceanu (Petrascu) C., d'Uffizi A., Fiorini C., Frizzi T., Ghio F., Girolami B., Guaraldo C., Hayano R.S., Iliescu M., Ishiwatari T., , Iwasaki M., Kienle P., Levi Sandri P., Longoni A., Lucherini V., Marton J., Okada S., Pietreanu D., Ponta T., Rizzo A., RomeroVidal A. , Scordo A., Shi H., Sirghi D.L., Sirghi F., Tatsuno H., Tudorache A., Tudorache V., Vazquez Doce O., Widmann E. and Zmeskal J.
"Kaonic helium-4 X-ray measurement in SIDDHARTA"
Phys.Lett.**B 681**:310-314,(2009).

17. Done R., Watanabe I., Goodway C., and Chowdhury M.,
"Seal Design of a 7000 bar Helium Containment Vessel Used for Muon Scatering",
Proceedings of 12th International Conference on Pressure Vessel Technology (ICPVT-12), 329-336 (2009).

18. Watanabe I., Ishii Y., Kawamata T., Suzuki T., Pratt F.L., Done R., Chowdhury M.,Goodway C., Dreyer J., Smith C., and Southern M.,
"Development of A Gas-Pressurized High-Pressure μSR Setup at the RIKEN-RAL Muon Facility",
Physica B **404**, 993-995 (2009)

19. Yokoyama K. ,Nagamine K. ,Simomura K. ,Tom H. W. ,Roland K. K. ,Bakule P. ,Matsuda Y. ,Pratt F. L. , and Torikai E. :
"Muons for spintronics: photo-induced conduction electron polarization in n-type GaAs observed by the muonium method",
Physica **B 404**, No. 5-7, pp.856--858 (2009). *

20. Mihara M., Shimomura K., Watanabe I., Ishii Y., Suzuki T., Kawamata T., Komurasaki J., Nishimura D., Nishiyama K., Kadono R., Takai S., and Nakano T.,
"Muon Spin Relaxation in Hydrogen Tungsten Bronze",
Physica B **404**, 801-803 (2009).

21. Nugroho A. A. ,Risdiana .. ,Mufti N. ,Palstra T. ,Watanabe I. ,and Tjia M. :
"Changes of spin dynamics in multiferroic Tb_1-xCa_xMnO_3",
Physica **B 404**, 785--788 (2009). *

22. Ito T. U. ,Higemoto W. ,Ohishi K. ,Heffner R. H. ,Nishida N. ,Satoh K. ,Sugawara H. ,Yuji A. ,Kikuchi D. , and Sato H. :
"Possible low-energy excitations of multipoles in $SmRu_4P_{12}$ probed by muon spin relaxation",
Physica **B 404**, 761--764 (2009). *

23. Yuji A. ,Tsunashima Y. ,Higemoto W. ,Yonezawa Y. ,Satoh K. ,Koda A. ,Ito T. U. ,Ohishi K. , Heffner R. H. ,Kikuchi D. ,and Sato H. :
"Weak ferromagnetic ordering in the anomalous field-insensitive heavy-fermion state in $SmOs_4Sb_{12}$",
Physica **B 404**, 757--760 (2009). *

24. Ohishi K. ,Heffner R. H. ,Spehling J. ,MacDougall G. J. ,Ito T. U. ,Higemoto W. ,Amato A. , Andreica D. ,Nieuwenhuys G. ,Klauss H. H. ,Luke G. M. ,Thompson J. D. ,Bianchi A. D. ,and Fisk Z. :
"Magnetism and superconductivity in heavy fermion superconductor $CeCo(In_{0.97}Cd_{0.03})_5$",
Physica **B 404**, 754--756 (2009). *

25. Tabata Y., Koyama T., Kohara T., Watanabe I., and Nakamura H.,
"Structural Transition in Mo_3Sb_7 Probed by Muon Spin Relaxation",
Physica **B** 404, 746-748 (2009).

26. Kase N., Akimitsu J., Ishii Y., Suzuki T., Watanabe I., Miyazaki M., Miraishi M., Takeshita S., and Kadono R.,
"Coexistense of Superconductivity and Magnetism in Tm-Based Superconductor Probed by Muon Spin Relaxation",
Physica **B 404**, 740-742 (2009).

27. Tanabe Y. ,Adachi T. ,Risdiana .. ,Kawamata T. ,Suzuki T. ,Watanabe I. ,and Koike Y. :
"Ni-substitution effects on Cu-spin correlation in La_2-xSr_xCu_1-yNi_yO_4 relating to hole trapping and stripe pinning",
Physica **B 404**, 717--719 (2009). *

28. Suzuki H.S., Furubayashi T., Kawashima Y., Nagata S., Suzuki T., Kawamata T., Watanabe I., Matsuzaki T., and Amato A.,
"μSR Study of Thiopinel $CuCrZrS_4$",
Physica **B 404**, 649-651 (2009).

29. Enomoto M., Kida N., Watanabe I., Suzuki T., and Kojima N.,
"Spin Dynamics of the Ferromagnetic Transition in Iron Mixed-Valence Complexes, $(n\text{-}C_nH_{2n+1})_4N[Fe^{II}Fe^{III}(dto)_3]$ (dto = $C_2O_2S_2$, n = 3-5) by μSR",
Physica **B 404**, 642-644 (2009)

30. Duan T.C., Nakano T., Matsumoto J., Suehiro R., Watanabe I., Suzuki T., Kawamata T., Amato A., Pratt F.L., and Nozue Y.,
"μSR Study on Ferromagnetic Properties of Rb Clustgers Incorporated into Zeolite A",
Physica **B 404**, 634-637 (2009).

31. Nakano T.,Matsumoto J.,Duan T.C.,Watanabe I., Suzuki T., Kawamata T., Amato A., Pratt F.L., and Nozue Y.,
"Fast Muon Spin Relaxation in Ferromagnetism of Potassium Clusters in Zeolite A",
Physica **B 404**, 630-633 (2009).

32. Satoh K. ,sato K. ,Yoshida T. ,Taniguchi H. ,Goko T. ,Ito T. U. ,Ohishi K. ,and Higemoto W. :
"μSR study of organic antiferromagnet β-(BEDT-TTF) $_2ICl_2$ under high pressure",
Physica **B 404**, 600--602 (2009). *

33. Satoh K. ,Fujita H. ,Katayama K. ,Taniguchi H. ,Goko T. ,Ito T. U. ,Ohishi K. ,and Higemoto W. :
"μSR study of an layered organic superconductor κ-$(BEDT\text{-}TTF)_4Hg_{2.89}Br_8$",
Physica **B 404**, 597--599 (2009). *

34. Goto T. ,Suzuki T. ,Watanabe I. ,Kanada K. ,Saito T. ,Osawa A. ,and Manaka H. :
"μSR-detected soft mode toward a possible phase transition in a disordered spin-gap system, $(CH_3)_2CHNH_3\text{-}Cu(Cl_xBr_{1-x})_3$",
Physica **B 404**, 594--596 (2009). *

35. Suzuki T. ,Yamada F. ,Watanabe I. ,Goto T. ,Osawa A. ,and Tanaka H. :
"Bond-randomness effect on the quantum spin system $Tl_{1-x}K_xCuCl_3$ probed by muon-spin-relaxation method",
Physica **B 404**, 590--593 (2009). *

36. Sugiyama J., Mukai K., Ikedo Y., Nozaki H., Mansson M., Watanabe I., Ariyoshi K., and Ohzuku T.,
"Li Diffusion in Li_xCoO_2 Probed by Muon-Spin Spectroscopy",
Phys. Rev. Lett. **103**, 147601-1-4 (2009)

37. Kim M., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kang B.H., Kim E., Kim J.H., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
"Three-Body Nonmesonic Weak Decay of the CLambda12 Hypernucleus" ,
Phys. Rev. Lett. **103,** 182502 (2009).

38. Doornenbal P., Scheit H., Aoi N., Takeuchi S., Li K., Takeshita E., Wang H., Baba H., Deguchi S., Fukuda N., Geissel H.,. Gernhauser R, Gibelin J., Hachiuma I., Hara Y., Hinke C., Inabe N., Itahashi K., Itoh S., Kameda D., Kanno S., Kawada Y., Kobayashi N., Kondo Y., Krucken R., Kubo T., Kuboki T., Kusaka K., Lantz M., Michimasa S., Motobayashi T., Nakamura T., Nakao T., Namihira K., Nishimura S., Ohnishi T., Ohtake M., Orr N.A., Otsu H., Ozeki K., Satou Y., Shimoura S., Sumikama T., Takechi M., Takeda H., Tanaka K.N., Tanaka K., Togano Y., Winkler M., Yanagisawa Y., Yoneda K., Yoshida A., Yoshida K., Sakurai H.,
"Spectroscopy of Ne-32 and the 'Island of Inversion'",
Phys. Rev. Lett. **103**, 032501 (2009).

39. Ito T. U. ,Higemoto W. ,Ohishi K. ,Nishida N. ,Heffner R. H. ,Yuji A. ,Amato A. ,Onimaru T. ,and Suzuki H. S. :
"Quantization of Hyperfine Field at Implanted μ^+ in $PrPb_3$: Interplay between Localized f electrons and Interstitial Charged Particle",
Phys. Rev. Lett. **102**, 096403-1--096403-4 (2009). *

40. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"First Results on Angular Distributions of Thermal Dileptons in Nuclear Collisions",
Phys. Rev. Lett. **102**, No. 22, pp.222301-1--222301-5 (2009). *

41. Koike T. and Harada T. :
"Deeply bound K^-pp state in the ^3He(in-flight K^-,n) spectrum, and its moving pole near the $\pi\Sigma N$ threshold",
Phys. Rev. **C 80**, 055208-1--055208-14 (2009). *

42. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bazilevsky A. V. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. , Fox B. ,Fujiwara K. ,Fukao Y. ,Goto Y. ,Gross P. M. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. ,Ichihara T. , Imai K. ,Inoue Y. ,Ishihara M. ,Jinnouchi O. ,Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. , Kiyomichi A. ,Kobayashi H. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. ,Nakano K. ,Onishi H. ,Okada H. , Okada K. ,Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. ,Tanida K. , Togawa M. ,Tojo J. ,Torii H. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S.:
"Erratum: Cold Nuclear Matter Effects on J/Ψ Production as Constrained by Deuteron-Gold Measurements at $\sqrt{s_{NN}}$=200GeV",
Phys. Rev. **C 79**, 059901-1--059901-3 (2009). *

43. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" Mesonic and non-mesonic weak decay of hypernuclei with FINUDA ",
Nucl. Phys. **A 827**, pp.303c—305c (2009)

44. Waki T., Kajinami Y., Tabata Y., Yoshida M., Takigawa M., Watanabe I., and Nakamura H.,
"Spin Singlet Formation from S = 1/2 Tetrahedral Clusters",
Phys. Rev. **B 81**, 020401(R)-1-4 (2009)

45. Ohishi K. ,Heffner R. H. ,Ito T. U. ,Higemoto W. ,Morris G. D. ,Hur H. ,Bauer E. D. ,Sarrao J. L. , Thompson J. D. ,MacLaughlin D. E. ,and Shu L. :
"Development of the heavy-fermion state in Ce_2IrIn_8 and the effects of Ce dilution in $(Ce_{1-x}La_x)_2IrIn_8$",
Phys. Rev. **B 80**, 125104-1--125104-7 (2009). *

46. Suzuki T. ,Watanabe I. ,Yamada F. ,Ishii Y. ,Ohishi K. ,Risdiana . ,Goto T. ,and Tanaka H. :
"Evidence for continuous change of spin states between impurity-induced order and pressure-induced order in $TlCu_{0.985}Mg_{0.015}Cl_3$ probed via muon spin rotation",
Phys. Rev. **B 80,** 064407-1--064407-5 (2009). *

47. Inoue H. ,Tani S. ,Hosoya S. ,Inokuchi K. ,Fujiwara T. ,Saito T. ,Suzuki T. ,Oosawa A. ,Goto T. , Fujisawa M. ,Tanaka H. ,Sasaki T. ,Awaji S. ,Watanabe K. ,and Kobayashi N. :
"$^{63/65}$Cu- and $^{35/37}$Cl-NMR Studies of Triplet Localization in the Quantum Spin System NH_4CuCl_3",
Phys. Rev. **B 79**, 174418-1--174418-7 (2009). *

48. Suzuki T. ,Yamada F. ,Kawamata T. ,Watanabe I. ,Goto T. ,and Tanaka H. :
"Quantum critical behavior in highly random systems $Tl_{1-x}K_xCuCl_3$ probed by zero- and longitudinal-field muon-spin-relaxation measurements",
Phys. Rev. **B 79**, 104409-1--104409-5 (2009). *

49. Andresen G. B. ,Bertsche W. ,Bray C. C. ,Butler E. ,Cesar C. L. ,Chapman S. ,Charlton M. ,Fajans J. , Fujiwara M. ,Gill D. R. ,Hardy W. N. ,Hayano R. ,Hayden M. E. ,Humphries A. J. ,Hydomako R. , Jorgensen L. V. ,Kerrigan S. J. ,Keller J. ,Kurchaninov L. ,Lamb R. ,Madsen N. ,Nolan P. ,Olchansk K. , Olin A. ,Povilus A. ,Pusa P. ,Robicheaux F. ,Sarid E. ,Seif El Nasr S. ,Silveira D. M. ,Storey J. W. , Thompson R. I. ,van der Werf D. P. ,Wurtele J. S. ,and Yamazaki Y. :
"Magnetic multipole induced zero-rotation frequency bounce-resonant loss in a Penning-Malmberg trap used for antihydrogen trapping",
Phys. Plasmas **16,** No. 10, pp.100702-1--100702-4 (2009). *

50. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
"New results on Mesonic Weak Decay of p-shell Lambda-Hypernuclei. ",
Phys, Lett. **B681**, 139-146 (2009)

51. De Rydt M. ,Neyens G. ,Asahi K. ,Balabanski D. L. ,Daugas J. ,Depuydt M. ,Gaudefroy L. ,Grevy S. , Hasama Y. ,Ichikawa Y. ,Morel P. ,Nagatomo T. ,Ohtsuka T. ,Perrot L. ,Shimada K. ,Stoedel C. ,Thomas J. , Ueno H. ,Utsuno Y. ,Wannes V. ,Vermeulen N. ,Vingerhoets P. ,and Yoshimi A. :
"Precision measurement of the electric quadrupole moment of ^{31}Al and determination of the effective proton charge in the sd-shell",
Phys. Lett. **B 678**, 344--349 (2009). *

52. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"Study of the electromagnetic transition form-factors in $\mu^+\mu^-$ and $\mu^+\mu^-\gamma$ decays with NA60",
Phys. Lett. **B 677,** No. 5, pp.260--266 (2009). *

53. Sato M. ,Ishimoto S. ,Hayashi T. ,Iio M. ,Iwasaki M. ,and Suzuki S. :
"Development of a super-fluid ^{4}He target system for an experimental search for nuclear K^{bar} states",
Nucl. Instrum. Methods Phys. Res. **A 606,** 233--237 (2009). *

54. Tomono D. ,Iio M. ,Ishida K. ,Iwasaki M. ,Outa H. ,Onishi H. ,Matsuzaki T. ,Matsuda Y. ,Yamazaki H. , Kasagi J. ,Klein R. ,and Nakamura S. :
"Development of new μ-e decay counters in a new multi-channel μSR spectrometer for an intense pulsed muon beam",
Nucl. Instrum. Methods Phys. Res. **A 600**, 44--46 (2009). *

55. Suzuki T. ,Yamada F. ,Watanabe I. ,Matsuzaki T. ,Goto T. ,Oosawa A. ,and Tanaka H. :
"Spin fluctuations in the ground state of doped quantum spin system $TlCu_{1-x}Mg_xCl_3$ with x = 0.0047 probed by muon-spin-relaxation (μSR) technique",
J. Phys. Soc. Jpn. **78**, No. 7, pp.074705-1--074705-5 (2009). *

56. Yagi E. ,Yoshii M. ,Okada Y. ,Matsuba H. ,Miyahara K. ,Koike S. ,Sugawara T. ,Shishido T. ,and Ogiwara K. :
"Site change of hydrogen in niobium on alloying with oversized Ta atoms",
J. Phys. Soc. Jpn. **78**, No. 6, pp.064601-1--064601-8 (2009). *

57. Oosawa A. ,Suzuki T. ,Kanada K. ,Kojima S. ,Goto T. ,and Manaka H. :
"^{1}H-NMR Spin-Lattice Relaxation Rate of the Quantum Spin System $IPACu(Cl_xBr_{1-x})_3$ with x=0 and 0.35",
J. Phys. Soc. Jpn. **78**, No. 5, pp.053702-1--053702-4 (2009). *

58. Kase N., Akimitsu J., Ishii1 Y., Suzuki T., Watanabe I., Miyazaki M., Hiraishi M., Takeshita S., and Kadono R.,
"Coexistence of Superconductivity and Magnetism in the Tm-based Reentrant Superconductor $Tm_5Rh_6Sn_{18}$",
J. Phys. Soc. Jpn. **78**, 074705-1-4 (2009)

59. Kawamata T. ,Sugawara N. ,Uesaka M. ,Kaneko N. ,Kajiwara T. ,Yamane H. ,Koyama K. ,Kudo K. , Kobayashi N. ,and Koike Y. :
"Single-Crystal Growth of $Pb_2V_3O_9$ and the Bose-Einstein Condensed State of Triplons Studied by Thermal Conductivity, Specific Heat and Magnetization Measurements",
J. Phys.: Con. Ser. **150**, 042087-1--042087-4 (2009). *

60. Adachi T.,Haidar S. ,Kawamata T. ,Sugawara N. ,Kaneko N. ,Uesaka M. ,Sato H. ,Tanabe Y. ,Noji T. ,Kudo K.,Kobayashi N.,Koike Y. :
"Thermal-conductivity study on the electronic state in the overdoped regime of $La_{2-x}Sr_xCuO_4$: Phase separation and anomaly at x ～0.21",
J. Phys.: Con. Ser. **150**, pp052115-1-052115-4 (2009). *

61. Kondo M. ,Uchikawa M. ,Namiki K. ,Zhang W. ,Kume S. ,Nishihori E. ,Aoyagi S. ,Sakata M. , Murata M. ,Kobayashi Y. ,and Nishihara H. :
"*Counterion-Dependent Valence Tautomerization of Ferrocenyl-Conjugated Pyrylium Salts*",
J. Am. Chem. Soc. **131**, 12112--12124 (2009). *

62. Zmeskal J., Bazzi M., Beer G., Bombelli L.,Bragadireanu A.M., Buhler P., Cargnelli M., Curceanu C., Fiorini C., Guaraldo C., Hayano R.S., Iliescu M., Ishiwatari T., Iwasaki M., Kienle P., Longoni A., Lucherini V., Marton J., Nikolics K., Okada S., Pietreanu D., Ponta T., Romero Vidal A., Sandri P.L., Scordo A., Sirghi D.L., Sirghi F., Suzuki K., Tatsuno H., Vazquez Doce O. and Widmann E,
"Kaonic atoms at DAFNE: The SIDDHARTA experiment",
Int. J. Mod. Phys. **A 24** (2009) 190~197

63. Sato M. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. ,Ishimoto S. , Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Kienle P. ,Kim J. ,Matsuda Y. ,Onishi H. ,Okada S. , Outa H. ,Suzuki S. ,Suzuki T. ,Tomono D. ,Widmann E. ,Yamazaki T. ,and Yim H. :
"*Search for strange tribaryon states in the He-4(stopped K-, p) reaction."*,
Int. J. Mod. Phys. **A 24**, No. 2-3, pp.442--445 (2009).

64. Akaishi Y, and Yamazaki T. :
"Structure of K^-pp system and super-strong nuclear force by migrating K^- meson : Its theoretical background",
Int. J. Mod. Phys. **A 24** (2009) 2118~2125

65. Bhang H., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kang B.H., Kim E., Kim J.H., Kim M., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
"Mechanisms of the nonmesonic weak decay of Lambda hypernuclei and the three-body process." ,
Mod. Phys. Lett. **A24**, 1023-1026 (2009)

66. Yamada Y. ,Kato K. ,Kouno K. ,Yoshida H. ,and Kobayashi Y. :
"Iron Films Produced by an Arc Plasma Gun",
Hyperfine Interact. **191**, 121--127 (2009). *

67. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"Phi production in In-In collisions at 158 AGeV",
Eur. Phys. J. **C 64**, No. 1, pp.1--18 (2009). *

68. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"NA60 results on thermal dimuons",
Eur. Phys. J. **C 61**, No. 4, pp.711--720 (2009). *

69. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"Evidence for the production of thermal muon pairs with masses above 1 GeV/c2 in 158A GeV Indium-Indium Collisions",
Eur. Phys. J. **C 59,** No. 3, pp.607--623 (2009). *

70. Asahi K. ,Ueno H. ,Shimada K. ,Nagatomo T. ,Yoshimi A. ,Nagae D. ,Kameda D. ,Uchida M. , Inoue T. ,Hatakeyama N. ,Kagami S. ,Hasama Y. ,Suzuki K. ,Murata J. ,Kawamura H. ,and Ishihara M. :
"Nuclear Structure Studies with Polarized Radioactive Beams",
AIP Conf. Proc. **1149**, 90--99 (2009). *

71. Koike T. and Harada T. :
"^{3}He(K^{-}, n) REACTION SPECTRUM NEAR THE $K^{bar}N \rightarrow \pi\Sigma$ DECAY THRESHOLD AND HE DEEPLY-BOUND K^{-}pp STATE",
Modern Physics Letter **A, Vol. 24**, Nos.11-13, Fourth Asia-Pacific Conference on Few-Body Problems in Physics , Depok , Indonesia , 2008-- 8 , World Scientific Publishing Co. Pte. Ltd., Singapore, pp.911--914 (2009).

72. Koike T. and Harada T. :
"FORMATION OF DEEPLY-BOUND K^-pp STATE IN ^3He(IN-FLIGHT K^-, n) REACTION SPECTRUM", International Journal of Modern Physics A, **Vol. 24,** No.11, Proceedings of KGU Yokohama Autumn School of Nuclear Physics , Yokohama , 2008-- 10 , World Scientific Publishing Co. Pte. Ltd., Singapore, pp.2126--2133 (2009).

73. Koike T. and Harada T. :
"The $K^{bar}N \rightarrow \pi\Sigma$ decay threshold effect in 3He(in-flight K^-,n) reaction spectrum",
Hyperfine Interactions, **Vol. 193**, Numbers 1-3, Proceedings of the International Conference on Exotic Atoms (EXA 2008) and the 9th International Conference on Low Energy Antiproton Physics (LEAP 2008) , Vienna , Austria , 2008-- 9 , Springer Netherlands, Dordrecht, pp.221--227 (2009). *

74. Hanaguri T. ,Kohsaka Y. ,Ono M. ,Maltseva M. ,Coleman P. ,Yamada I. ,Azuma M. ,Takano M. ,Ohishi K. ,and Takagi H. : *"Coherence Factors in a High-Tc Cuprate Probed by Quasi-particle Scattering off Vortices",*
Science **323**, No. 5916, pp.923--926 (2009). *

75. Drew A.J., Niedermayer Ch., Baker P.J., Pratt F.L., Blundell S.J., Lancaster T., Liu R.H., Wu G., Chen X.H., Watanabe I., Malik V.K., Dubroka A., Rossle M., Kim K.W., Baines C., and Bernhard C.,
"*Coexistence of Static Magnetism and Superconductivity in $SmFeAsO_{1-x}F_x$ as Revealed by Muon Spin Rotation",*
Nature Material **8**, 310-314 (2009).

76. Ishida T.,Okamura Y., and Watanabe I.,
"Long-Range Order in the One-Dimensional Cobalt(II)-Radical Coordination Polymer Magnet Probed by Muon Spin Rotation and Relaxation",
Imorg. Chem. **45**, 7012-7014 (2009)

2008

77. Sielemann R. ,Kobayashi Y. ,Yoshida Y. ,Gunnlaugsson H. P. ,and Weyer G. :
"*Magnetism at Single Isolated Iron Atoms Implanted in Graphite"*,
Phys. Rev. Lett. **101**, 1372061--1372064 (2008). *

78. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. ,Fujiwara K. , Fukao Y. ,Goto Y. ,Gross P. M. ,Hachiya T. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. ,Ichihara T. ,Imai K. , Inoue Y. ,Ishihara M. ,Jinnouchi O. ,Kajihara F. ,Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. , Kiyomichi A. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. ,Nakano K. ,Onishi H. ,Okada H. ,Okada K. , Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. ,Tanida K. ,Togawa M. ,Tojo J. , Torii H. ,Tsuchimoto Y. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"Suppression pattern of neutral pions at high transverse momentum in Au+Au collisions at $\sqrt{s_{NN}}$=200GeV and constraints on medium ransport coefficients",
Phys. Rev. Lett. **101**, 232301-1--232301-7 (2008). *

79. Akaishi Y., Khin Swe Myint and Yamazaki. T,
"Kaonic nuclear systems $K^{bar}N$ and $K^{bar}NN$ as decaying states"
Proc. Jpn. Acad. B **84** (2008) 264~273.

80. Akaishi Y,
"Kaonic nuclei as decaying states",
Modern Phys. Lett. **A 23** (2008) 2516~2519.

81. Akaishi Y and Khin Swe Myint,
"*ΛNN three-body force due to coherent Λ-Σ coupling",*
Proceedings of International Symposium on New Facet of Three Nucleon Force 50 years of Fujita-Miyazawa Three Nucleon Force, AIP Conference Proceedings **1011** (2008) 277~286.

82. Drew A.J., Pratt F.L., Lancaster T., Blundell S.J., Baker P.J., Liu R.H., Wu G., Chen X.H., Watanabe I., Malik V. K., and Bernhard C.,
"Coexistence of Magnetism and Superconductivity in the Pnictide High Temperature Superconductor $SmO_{1-x}F_xFeAs$ Measured by Muon Spin Rotation",
Phys. Rev. Lett. **101**, 0970101-1-4 (2008)

83. Koyama T., Yamashita H., Ueda K., Mito T., Kohara T., Takahashi Y., Tanaka Y., Watanabe I., Tabata Y., and Nakamura H., *"Frustration-Induced valence Bond Crystal and its Melting in Mo_3Sb_7"*,
Phys. Rev. Lett. **101**, 126404-1-4 (2008).

84. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bunce G. M. ,Dairaku S. ,Deshpande A. ,Enyo H. ,Fields D. E. , Fujiwara K. ,Fukao Y. ,Goto Y. ,Gross P. M. ,Horaguchi T. ,Ichihara T. ,Ichimiya R. ,Imai K. ,Inoue Y. , Ishihara M. ,Jinnouchi O. ,Kametani S. ,Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. ,Kiyomichi A. , Kurita K. ,Kurosawa M. ,Li Z. ,Mao Y. ,Murata J. ,Nakagawa I. ,Nakano K. ,Onishi H. ,Okada H. ,Okada K. , Onuki Y. ,Rykov V. L. ,Saito N. ,Sakashita K. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. ,Tanida K. , Togawa M. ,Tojo J. ,Torii H. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"Onset of π^0 production studied in Cu+Cu collisions at $\sqrt{s_{NN}}$= 22.4, 62.4, and 200 GeV",
Phys. Rev. Lett. **101**, 162301-1--162301-6 (2008). *

85. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. ,Fujiwara K. , Fukao Y. ,Goto Y. ,Gross P. M. ,Horaguchi T. ,Ichihara T. ,Imai K. ,Inoue Y. ,Ishihara M. ,Jinnouchi O. , Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. ,Kiyomichi A. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. , Nakano K. ,Onishi H. ,Okada H. ,Okada K. ,Rykov V. L. ,Saito N. ,Shibata T. ,Shoji K. ,Tabaru T. , Taketani A. ,Tanida K. ,Togawa M. ,Tojo J. ,Torii H. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"J/ψ Production in $\sqrt{s_{NN}}$= 200 GeV Cu+Cu Collisions",
Phys. Rev. Lett. **101**, 122301-1--122301-6 (2008). *

86. Afanasiev S. ,Akiba Y. ,Aoki K. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. ,Fukao Y. ,Goto Y. , Gross P. M. ,Hachiya T. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. ,Ichihara T. ,Imai K. ,Ishihara M. , Jinnouchi O. ,Kajihara F. ,Kamihara N. ,Kaneta M. ,Kiyomichi A. ,Kurita K. ,Murata J. ,Onishi H. , Okada H. ,Okada K. ,Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. , Tanida K. ,Togawa M. ,Tojo J. ,Torii H. ,Tsuchimoto Y. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"*Particle-species dependent modification of jet-induced correlations in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV"*,
Phys. Rev. Lett. **101**, 082301-1--082301-6 (2008). *

87. Afanasiev S. ,Akiba Y. ,Aoki K. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. ,Fukao Y. ,Goto Y. , Gross P. M. ,Hachiya T. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. ,Ichihara T. ,Imai K. ,Ishihara M. , Jinnouchi O. ,Kajihara F. ,Kamihara N. ,Kaneta M. ,Kiyomichi A. ,Kurita K. ,Murata J. ,Onishi H. , Okada H. ,Okada K. ,Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. , Tanida K. ,Togawa M. ,Tojo J. ,Torii H. ,Tsuchimoto Y. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"Source breakup dynamics in Au+Au Collisions at $\sqrt{s_{NN}}$=200 GeV via three-dimensional two-pion source imaging",
Phys. Rev. Lett. **100**, 232301-1--232301-6 (2008). *

88. Bennett G.W., Bousquet B., Brown H.N., Bunce G., Carey R.M., Cushman P., Danby G.T., Debevec P.T., Deile M., Deng H., Deninger W., Dhawan S.K., Druzhinin V.P., Duong L., Efstathiadis E., Farley F.J.M., Fedotovich G.V., Giron S., Gray F., Grigoriev D., Grosse-Perdekam M., Grossmann A., Hare M., Hertzog D.W., Huang X., Hughes V.W. , Iwasaki M., Jungmann K., Kawall D., Kawamura M., Khazin B.I., Kinde J., Krienen F., Kronkvis I., Lam A., Larsen R., Lee Y.Y., Logashenko I.B., McNabb R., Meng W., Mi J., Miller J.P., Morse W.M., Nikas D., Onderwater C.J.G., Orlov Yu. F., Ozben C., Paley J., Peng Q., Polly C., Pretz J., Prigl R., Putlitz G. zu, Qian T., Redin S.I., Rind O., Roberts B.L., Ryskulov N.M., Sedykh S., Semertzidis Y.K., Shagin P., Shatunov Yu.M., Sichtermann E.P., Solodov E.P., Sossong M., Steinmetz A., Sulak L., Timmermans C., Trofimov A., Urner D., Walter P. von, Warburton D., Winn D., Yamamoto A. and Zimmerman D.
Search for Lorentz and CPT violation effects in muon spin precession
Phys.Rev.Lett.**100**:091602,(2008).

89. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"Evidence for radial flow of thermal dileptons in high-energy nuclear collisions",
Phys. Rev. Lett. **100**, No. 2, pp.022302-1--022302-5 (2008). *

90. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bazilevsky A. V. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. , Fox B. ,Fujiwara K. ,Fukao Y. ,Goto Y. ,Gross P. M. ,Hachiya T. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. , Ichihara T. ,Imai K. ,Inoue Y. ,Ishihara M. ,Jinnouchi O. ,Kajihara F. ,Kamihara N. ,Kaneta M. ,Kanoh H. , Kawall D. ,Kiyomichi A. ,Kobayashi H. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. ,Nakano K. ,Onishi H. , Okada H. ,Okada K. ,Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. , Tanida K. ,Togawa M. ,Tojo J. ,Torii H. ,Tsuchimoto Y. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"Charged hadron multiplicity fluctuations in Au+Au and Cu+Cu collisions from $\sqrt{s_{NN}}$ *= 22.5 to 200 GeV",*
Phys. Rev. **C 78**, 044902-1--044902-15 (2008). *

91. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. ,Fujiwara K. , Fukao Y. ,Goto Y. ,Gross P. M. ,Hachiya T. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. ,Ichihara T. ,Imai K. , Inoue Y. ,Ishihara M. ,Jinnouchi O. ,Kajihara F. ,Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. , Kiyomichi A. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. ,Nakano K. ,Onishi H. ,Okada H. ,Okada K. , Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. ,Tanida K. ,Togawa M. ,Tojo J. , Torii H. ,Tsuchimoto Y. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"Dihadron azimuthal correlations in Au+Au collisions at $\sqrt{s_{NN}}$ *=200 GeV",*
Phys. Rev. **C 78**, 014901-1--014901-42 (2008). *

92. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. ,Fujiwara K. , Fukao Y. ,Goto Y. ,Gross P. M. ,Hachiya T. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. ,Ichihara T. ,Imai K. , Inoue Y. ,Ishihara M. ,Jinnouchi O. ,Kajihara F. ,Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. , Kiyomichi A. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. ,Nakano K. ,Onishi H. ,Okada H. ,Okada K. , Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. ,Tanida K. ,Togawa M. ,Tojo J. , Torii H. ,Tsuchimoto Y. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"*Quantitative Constraints on the Transport Properties of Hot Partonic Matter from Semi-Inclusive Single High Transverse Momentum Pion Suppression in Au+Au Collisions at* $\sqrt{s_{NN}}$ *= 200 GeV.*",
Phys. Rev. **C 77**, 064907-1--064907-12 (2008). *

93. Adare A. ,Akiba Y. ,Aoki K. ,Asai J. ,Bazilevsky A. V. ,Bunce G. M. ,Deshpande A. ,Enyo H. ,Fields D. E. , Fox B. ,Fujiwara K. ,Fukao Y. ,Goto Y. ,Gross P. M. ,Hasuko K. ,Heuser J. M. ,Horaguchi T. ,Ichihara T. , Imai K. ,Inoue Y. ,Ishihara M. ,Jinnouchi O. ,Kamihara N. ,Kaneta M. ,Kanoh H. ,Kawall D. , Kiyomichi A. ,Kobayashi H. ,Kurita K. ,Mao Y. ,Murata J. ,Nakagawa I. ,Nakano K. ,Onishi H. ,Okada H. , Okada K. ,Rykov V. L. ,Saito N. ,Sato H. ,Shibata T. ,Shoji K. ,Tabaru T. ,Taketani A. ,Tanida K. , Togawa M. ,Tojo J. ,Torii H. ,Wagner M. M. ,Watanabe Y. ,Xie W. ,and Yokkaichi S. :
"*Cold Nuclear Matter Effects on J/ψ Production as Constrained by Deuteron-Gold Measurements at* $\sqrt{s_{NN}}$*=200 GeV*",
Phys. Rev. **C 77**, 024912-1--024912-15 (2008). *

94. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" *Correlated Lambda t pairs from the absorption of K- at rest in light nuclei.*.”,
Phys. Lett. **B669**, 229--234 (2008).

95. Sato M. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. ,Ishimoto S. , Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Kienle P. ,Kim J. ,Matsuda Y. ,Onishi H. ,Okada S. , Outa H. ,Suzuki S. ,Suzuki T. ,Tomono D. ,Widmann E. ,Yamazaki T. ,and Yim H. :
"*Search for strange tribaryon states in the inclusive* $^{4}He(K^{-},p)$ *reaction*",
Phys. Lett. **B 659**, No. 1-2, pp.107--112 (2008). *

96. Iwasaki M. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. , Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Kienle P. ,Kim J. ,Matsuda Y. ,Onishi H. ,Okada S. ,Outa H. , Sato M. ,Suzuki S. ,Suzuki T. ,Tomono D. ,Widmann E. ,Yamazaki T. ,and Yim H. :
"Kaonic nuclear state search via K^{-} *reaction at rest on* ^{4}He *target"*,
Nucl. Phys. **A 804**, No. 1-4, pp.186--196 (2008). *

97. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" Measurement of the proton spectra from Non-Mesonic Weak Decay of hyHe-5-Lambda), Li-5-Lambda and C-12 -Lambda).”,
Nucl. Phys **A804**, 151-161 (2008).

98. Bakule P. ,Matsuda Y. ,Miyake Y. ,Nagamine K. ,Iwasaki M. ,Ikedo Y. ,Simomura K. ,Strasser P. , and Makimura S. :
"Pulsed source of ultra low energy positive muons for near-surface μSR studies",
Nucl. Instrum. Methods Phys. Res. **B 266**, 335--346 (2008). *

99. Sato W. ,Ueno H. ,Watanabe H. ,Miyoshi H. ,Yoshimi A. ,Kameda D. ,Ito T. ,Shimada K. ,Kaihara J. , Suda S. ,Kobayashi Y. ,Shinohara A. ,Ohkubo Y. ,and Asahi K. :
"Online time-differential perturbed angular correlation study with an ^{19}O beam - Residence sites of oxygen atoms in highly oriented pyrolytic graphite",
Nucl. Instrum. Methods Phys. Res. **B 26,** 316--322 (2008).

100. Sato W. ,Ueno H. ,Watanabe H. ,Miyoshi H. ,Yoshimi A. ,Kameda D. ,Ito T. ,Shimada K. ,Kaihara J. , Suda S. ,Kobayashi Y. ,Shinohara A. ,Ohkubo Y. ,and Asahi K. :
"Temperature Dependent Behaviour of Impurity Atoms Implanted in Highly Oriented Pyrolytic Graphite -An Application of a New Online TDPAC Method-",
J. Phys. Soc. Jpn. **77**, 0950011--0950012 (2008). *

101. Kobayashi Y. ,Yamada Y. ,Tsuruoka Y. ,Kubo K. ,Shoji H. ,Watanabe Y. ,Takayama T. ,Sakai Y. , Sato W. ,Shinohara A. ,Segawa M. ,and Matsue H. :
"Neutron in-beam Mossbauer spectroscopy of iron disulfide at 298 and 78 K",
Hyperfine Interact. **187**, 49--55 (2008). *

102. Yamada Y. ,Kouno K. ,Kato H. ,and Kobayashi Y. :
"Reaction and deposition of laser-evaporated iron",
Hyperfine Interact. 182, 65--75 (2008). *

103. Sato M. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. ,Ishimoto S. , Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Kienle P. ,Kim J. ,Matsuda Y. ,Onishi H. ,Okada S. , Outa H. ,Suzuki S. ,Suzuki T. ,Tomono D. ,Widmann E. ,Yamazaki T. ,and Yim H. :
"Search for strange tribaryon in the ^{4}He(stopped K^-, N) reaction.",
Frascati Physics Series **XLVI**, 1267--1271 (2008).

104. Andresen G. B. ,Bertsche W. ,Bowe P. D. ,Bray C. C. ,Butler E. ,Cesar C. L. ,Chapman S. ,Charlton M. , Fajans J. ,Fujiwara M. ,Funakoshi R. ,Gill D. R. ,Hangst J. S. ,Hardy W. N. ,Hayano R. ,Hayden M. E. , Hydomako R. ,Jenkins M. J. ,Jorgensen L. V. ,Kurchaninov L. ,Lambo R. ,Madsen N. ,Nolan P. ,Olchanski K. , Olin A. ,Povilus A. ,Pusa P. ,Robicheaux F. ,Sarid E. ,Seif EI Nasr S. ,Silveira D. M. ,Storey J. W. , Thompson R. I. ,van der Werf D. P. ,Wurtele J. S. ,and Yamazaki Y. :
"Compression of Antiproton Clouds for Antihydrogen Trapping",
Phys. Rev. Lett. **100**, No. 20, pp.203401-1--203401-5 (2008). *

105. Hiyama E. ,Yamamoto Y. ,Motoba T. ,Thomas R. ,and Kamimura M. :
"Light Ξ hypernuclei in four-body cluster models",
Phys. Rev. **C 78**, 054316-1--054316-13 (2008). *

106. Adachi T. ,Oki N. ,Risdiana R. ,Yairi S. ,Koike Y. ,and Watanabe I. :
"Effects of Zn and Ni substitution on the Cu spin dynamics and superconductivity in $La_{2-x}Sr_xCu_{1-y}(Zn,Ni)_yO_4$ (x=0.15-0.20): Muon spin relaxation and magnetic susceptibility study",
Phys. Rev. **B 78**, No. 134515, pp.1--11 (2008). *

107. Yamada F. ,Ishii Y. ,Suzuki T. ,Matsuzaki T. ,and Tanaka H. :
"Pressure-induced reentrant oblique antiferromagnetic phase in the spin-dimer system $TlCuCl_3$",
Phys. Rev. **B 78**, 224405-1--224405-6 (2008). *

108. Goto T. ,Suzuki T. ,Kanada K. ,Saito T. ,Osawa A. ,Watanabe I. ,and Manaka H. :
"Muon spin relaxation detection of the soft mode toward the exotic magnetic ground state in the bond-disordered quantum spin system IPA-$Cu(Cl_{0.35}Br_{0.65})_3$",
Phys. Rev. **B 78**, 054422-1--054422-6 (2008). *

109. Mitrovic V. ,Julien M. ,Vaulx C. ,Horvatic M. ,Berthier C. ,Suzuki T. ,and Yamada K. :
"Similar glassy features in the ^{139}La NMR response of pure and disordered $La_{1.88}Sr_{0.12}CuCO_4$",
Phys. Rev. **B 78**, 014504-1--014504-7 (2008). *

110. Koike T. and Harada T. :
"Isospin properties of (K^-, N) reactions for the formation of deeply-bound antikaonic nuclei",
Nucl. Phys. **A 804**, 231--273 (2008). *

111. Iwasaki M. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. , Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Kienle P. ,Kim J. ,Matsuda Y. ,Onishi H. ,Okada S. ,Outa H. , Sato M. ,Suzuki S. ,Suzuki T. ,Tomono D. ,Widmann E. ,Yamazaki T. ,and Yim H. :
"Kaonic nuclear state search via K^- reaction at rest on ^4He target",
Nucl. Phys. **A 804**, No. 1-4, pp.186--196 (2008).

112. Suzuki T. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. , Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Kienle P. ,Kim J. ,Matsuda Y. ,Onishi H. , Okada S. ,Outa H. ,Sato M. ,Suzuki S. ,Tomono D. ,Widmann E. ,Yamazaki T. ,and Yim H. :
"*YN correlations from the stopped K^- reaction on ^4He*",
Mod. Phys. Lett. **A 23**, No. 27-30, pp.2520--2523 (2008).

113. Kida N., Enomoto M., Watanabe I., Suzuki T., and Kojima N.,
"First Observation of the Dynamics of Electron Transfer in Iron Mixed-Valence Complex by Muon-Spin-Relaxation",
Phys. Rev. **B 77**, 144427-1-5 (2008).

114. Risdiana, Adachi T.,Oki N.,Yairi S.,Tanabe Y.,Omori K.,Koike Y.,Suzuki T.,Watanabe I.,Koda A.,and Higemoto W.,
"Cu-Spin Dynamics in the Overdoped Regime of $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$ Probed by Muon Spin Relaxation",
Phys. Rev. **B 77**, 054516-1-6 (2008)

115. Hayano R.,Beer G. A. ,Bhang H. ,Cargnelli M. ,Chiba J. ,Choi S. ,Curceanu C. O. ,Fukuda Y. ,Hanaki T. , , Iio M. ,Ishikawa T. ,Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Juhasz B. ,Kienle P. ,Marton J. ,Matsuda Y., Okada S. ,Onishi H. ,Outa H. ,Schmid P. ,Sato M. ,Suzuki S. ,Suzuki T. ,Tatsuno H. ,Tomono D. ,Widmann E. ,Yamazaki T. ,Yim H. ,and Zmeskal J. :
"Solving the kaonic-helium puzzle.",
Modern Phys. Lett. **A 23 2505** (2008)

116. Sakuma F. ,Enyo H. ,Fukao Y. ,Funahashi H. ,Hamagaki H. ,Kitaguchi M. ,Miwa K. ,Murakami T. ,Naruki M. ,Ozawa K. ,Sekimoto M. ,Tabaru T. ,Togawa M. ,Yokkaichi S. ,Chiba J. ,Kanda H. ,Ieiri M. ,Ishino M. ,Mihara S. ,Miyashita T. ,Muto R. ,Nakura T. ,Sasaki O. ,Tanaka K. ,Yamada S. ,and Yoshimura Y. :
"Partial decay widths of the phi into e+e- and K+K- pairs in 12 GeV p+A reactions at KEK-PS E325",
Mod. Phys. Lett. **A 23**, No. 27/30, pp.2401--2404 (2008). *

117. Koike T. and Harada T. :
"Formation of the deeply-bound K^-pp state in ^3He(in-flight K^-,n) spectrum",
Mod. Phys. Lett. **A 23**, No. 27-30, Proceedings of the International Workshop on Chiral Symmetry in Hadron and Nuclear Physics (CHIRAL07) pp.2540--2543 (2008). *

118. Yagi E. ,Sakuma K. ,Higami N. ,Hagiwara S. ,Mori K. ,Yoshii M. ,Koike S. ,Hayashi T. ,and Ogiwara K. :
"Irradiation-induced site change of hydrogen in niobium",
J. Phys. Soc. Jpn. 77, No. 12, pp.124602-1--124602-7 (2008). *

119. Sato W. ,Ueno H. ,Watanabe H. ,Miyoshi H. ,Yoshimi A. ,Kameda D. ,Ito T. ,Shimada K. ,Kaihara J. , Suda S. ,Kobayashi Y. ,Shinohara A. ,Ohkubo Y. ,and Asahi K. :
"Temperature-dependent behavior of impurity atoms implanted in highly oriented pyrolytic graphite --An application of a new online TDPAC method--",
J. Phys. Soc. Jpn. **77**, No. 9, pp.095001-1--095001-2 (2008). *

120. Yagi E. ,Hirabayashi K. ,Murakami Y. ,Koike S. ,Higami N. ,Hayashi T. ,Takebayashi A. ,Yoshida T. ,Sugi C. , Sugawara T. ,Shishido T. ,and Ogiwara K. :
"Site change of hydrogen in Nb due to interaction with oxygen",
J. Phys. Soc. Jpn. **77**, No. 5, pp.054802-1--0540802-8 (2008). *

121. Kawamata T. ,Takahashi N. ,Adachi T. ,Noji T. ,Kudo K. ,Kobayashi N. ,and Koike Y. :
"Evidence for Ballistic Thermal Conduction in the One-Dimensional S = 1/2 Heisenberg Antiferromagnetic Spin System Sr_2CuO_3",
J. Phys. Soc. Jpn. **77**, No. 3, pp.034607-1--034607-6 (2008). *

122. Watanabe I., Adachi T., Yairi S., Koike Y., and Nagamine K.,
"*Change of the Dynamics of Internal Fields in the Normal State of $La_{2-x}Sr_xCuO_4$ Observed by Muon-Spin-Relaxation*",
J. Phys. Soc. Jpn. **77**, 124716-1-6 (2008).

123. Andresen G. B. ,Bertsche W. ,Boston A. ,Bowe P. D. ,Cesar C. L. ,Chapman S. ,Charlton M. ,Chartier M. ,Deutsch A. ,Fajans J. ,Fujiwara M. ,Funakoshi R. ,Gill D. R. ,Gomberoff K. ,Hangst J. S. ,Hayano R. ,Hydomako R. ,Jenkins M. J. ,Jorgensen L. V. ,Kurchaninov L. ,Madsen N. ,Nolan P. ,Olchanski K. ,Olin A. ,Page R. D. ,Povilus A. ,Robicheaux F. ,Sarid E. ,Silveira D. M. ,Storey J. W. ,Thompson R. I. ,Van der Werf D. P. ,Wurtele J. S. ,and Yamazaki Y. :
"Production of antihydrogen at reduced magnetic field for anti-atom trapping",
J. Phys. **B 41**, 011001-1--011001-5 (2008).

124. Kameda D. ,Asahi K. ,Ueno H. ,Nagae D. ,Takemura M. ,Shimada K. ,Yoshimi A. ,Nagatomo T. ,Sugimoto T. , Uchida M. ,Arai T. ,Takase K. ,Suda S. ,Inoue T. ,Murata J. ,Kawamura H. ,Watanabe H. ,Kobayashi Y. , and Ishihara M. :
"Electric quadrupole moments of neutron-rich nuclei ^{32}Al and ^{31}Al",
Hyperfine Interact. **180**, 61--64 (2008). *

125. Kiselev A. ,Ladygin V. ,Uesaka T. ,Vasiliev A. ,Janek M. ,Saito T. ,Hatano M. ,Isupov Y. ,Kato H. , Ladygina N. ,Maeda Y. ,Malakhov A. ,Nishikawa J. ,Ohnishi T. ,Okamura H. ,Reznikov S. ,Sakai H. , Sakamoto N. ,Sakoda S. ,Satou Y. ,Sekiguchi K. ,Suda K. ,Tamii A. ,Uchigashima N. ,and Yako K. :
"Analyzing powers in the $^{12}C(d, p)\,^{13}C$ reaction at the energy $T_d = 270$ MeV",
Eur. Phys. J. Special Topics **162**, 143--146 (2008). *

126. Ladygin V. ,Uesaka T. ,Saito T. ,Janek M. ,Kiselev A. ,Kurilkin A. ,Vasiliev A. ,Hatano M. ,Isupov Y. , Kato H. ,Ladygina N. ,Maeda Y. ,Malakhov A. ,Nishikawa J. ,Ohnishi T. ,Okamura H. ,Reznikov S. , Sakai H. ,Sakoda S. ,Sakamoto N. ,Satou Y. ,Sekiguchi K. ,Suda K. ,Tamii A. ,Uchigashima N. ,and Yako K. :
"Analyzing powers in the $dd \to {}^3Hen({}^3Hp)$ reactions at intermediate energies",
AIP Conf. Proc. 1011, 235--240 (2008). *

127. Kameda D. ,Ueno H. ,Asahi K. ,Nagae D. ,Yoshimi A. ,Nagatomo T. ,Sugimoto T. ,Uchida M. , Takemura M. ,Shimada K. ,Takase K. ,Inoue T. ,Kijima G. ,Arai T. ,Suda S. ,Murata J. ,Kawamura H. , Kobayashi Y. ,Watanabe H. ,and Ishihara M. :
"Production of spin-polarized radioactive ion beams via projectile fragmentation reaction",
AIP Conf. Proc. 980, 283--288 (2008). *

128. Koike T. and Harada T. :
"The formation of the deeply-bound K^-pp state in ^3He(in-flight K^-,n) reaction spectrum",
Proceedings of International Conference on Muon Catalyzed Fusion and Related topics (μCF-07) , Dubna , Russia , 2007-- 6 , Joint Institue for Nuclear Research, Dubna, pp.222--229 (2008).

129. Sato W. ,Ueno H. ,Watanabe H. ,Miyoshi H. ,Yoshimi A. ,Kameda D. ,Ito T. ,Shimada K. ,Kaihara J. , Suda S. ,Kobayashi Y. ,Shinohara A. ,Ohkubo Y. ,and Asahi K. :
"Online time-differential perturbed angular correlation study with an ^{19}O beam Residence sites of oxygen atoms in highly oriented pyrolytic graphite",
Nucl. Instrum. Methods Phys. Res. **B 266**, 316--322 (2008). *

130. Sugiyama J., Mukai K., Ikedo Y., Russo P.L., Suzuki T., Watanabe I., Brewer J.H., Ansaldo E.J., Chow K.H., Arioshi K., Ohzuku T., *"Cooperative Jahn-Teller Transition in $Li[Li_xMn_{2-x}]O_4$: A Muon-Spin Rotation/Relaxation View"*,
J. Material Science: Materials in Electronics, **19**, 875-882 (2008).

131. Watanabe I., Adachi T., Yairi S., Koike Y., and Nagamine K.,
"Precise Measurement of the Dynamics of Local Fields in the Underdoped Regime of $La_{2-x}Sr_xCuO_4$ by μSR",
J. Phys. Conference Series **108**, 012004-1-5 (2008).

2007

132. Andresen G. ,Bertsche W. ,Boston A. ,Bowe P. D. ,Cesar C. L. ,Chapman S. ,Charlton M. ,Chartier M. , Deutsch A. ,Fajans J. ,Fujiwara M. ,Funakoshi R. ,Gill D. R. ,Gomberoff K. ,Hangst J. S. ,Hayano R. , Hydomako R. ,Jenkins M. J. ,Jorgensen L. V. ,Kurchaninov L. ,Madsen N. ,Nolan P. ,Olchanski K. , Olin A. ,Povilus A. ,Robicheaux F. ,Sarid E. ,Silveira D. M. ,Storey J. W. ,Telle H. H. ,Thompson R. I. , van der Werf D. P. ,Wurtele J. S. ,and Yamazaki Y. :
"Antimatter Plasmas in a Multipole Trap for Antihydrogen",
Phys. Rev. Lett. **98**, 023402-1--023402-4 (2007). *

133. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" *The A(K-(stop), Lambda d)A-prime reaction, a tool to observe [anti-K N N N] clusters.",*
Eur. Phys. J **A33** 283-286 (2007)

134. Bhang H. C. ,Ajimura S. ,Aoki K. ,Banu A. ,Fukuda T. ,Hashimoto O. ,Hwang J. ,Kameoka S. ,Kang B. , Kim E. ,Kim J. ,Kim M. ,Maruta T. ,Miura Y. ,Miyake Y. ,Nagae T. ,Nakamura M. ,Nakamura S. N. , Noumi H. ,Okada S. ,Okayasu Y. ,Outa H. ,Park H. ,Saha P. K. ,Sato Y. ,Sekimoto M. ,Shin S. , Takahashi T. ,Tamura H. ,Tanida K. ,Toyota A. ,Tsukada K. ,Watanabe T. ,and Yim H. :
"The quenching of nucleon yields in the nonmesonic weak decay of Λ-hypernuclei and the three-body weak decay process",
Eur. Phys. J. **A 33**, No. 3, pp.259--263 (2007).

135. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
"*Study of the proton weak decay of (Lambda)C-12(g.s.) with FINUDA "*,
Eur. Phys. J **A33** 251-254 (2007)

136. Yim H. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. S. ,Iio M. ,Ishikawa T. , Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Kienle P. ,Kim J. H. ,Matsuda Y. ,Okada S. , Onishi H. ,Outa H. ,Sato M. ,Suzuki S. ,Suzuki T. ,Tomono D. ,Widmann E. ,and Yamazaki T. :
"*Experimental search of strange tribaryons in the $^{4}He(K^{-}_{stop}, n)$ reaction*",
The IX International Conference on Hypernuclear and Strange Particle Physics , Mainz , Germany , 2006-- 10 , SIF and Springer, Mainz, pp.201--205 (2007). *

137. Yoshida Y.,Kobayashi Y.,Yukihira K. ,Hayakawa K. ,Suzuki K. ,Yoshida A. ,Ueno H. ,Yoshimi A. ,Shimada K. ,Nagae D.,Asahi K. and Langouche G.:
"^{57}Fe diffusion in n-type Si after GeV implantation of ^{57}Mn",
Physica **B 401**, 101--104 (2007). *

138. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"J/psi production in Indium-Indium collisions at 158 GeV/nucleon",
Phys. Rev. Lett. **99**, No. 13, pp.132302-1--132302-4 (2007). *

139. Suzuki T.,Bhang H.,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. S. ,Iio M. ,Ishikawa T. , Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Kienle P. ,Kim J. H. ,Matsuda Y. ,Okada S. , Onishi H. ,Outa H.,Sato M.,Suzuki S.,Tomono D.,Widmann E. ,Yamazaki T. ,and Yim H.:
" *Λd correlations from the ^{4} He(stopped- K^{-} , d) reaction*",
Phys. Rev. **C 76**, No. 6, pp.068202-1--068202-4 (2007). *

140. Okada S. ,Beer G. A. ,Bhang H. ,Cargnelli M. ,Chiba J. ,Choi S. ,Curceanu C. O. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. ,Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Juhasz B. ,Kienle P. ,Marton J. ,Matsuda Y. ,Onishi H. ,Outa H. ,Schmid P. ,Sato M. ,Suzuki S. ,Suzuki T. ,Tatsuno H. ,Tomono D. ,Widmann E. ,Yamazaki T. ,Yim H. ,and Zmeskal J. :
"Precision measurement of the 3d→2p x-ray energy in kaonic ^{4}He",
Phys. Lett. ***B 653***, No. 5-6, pp.387--391 (2007). *

141. Bennett G.W., Bousquet B., Brown H.N., Bunce G., Carey R.M., Cushman P., Danby G.T., Debevec P.T., Deile M., Deng H., Deninger W., Dhawan S.K., Druzhinin V.P., Duong L., Efstathiadis E., Farley F.J.M., Fedotovich G.V., Giron S., Gray F., Grigoriev D., Grosse-Perdekam M., Grossmann A., Hare M., Hertzog D.W., Huang X., Hughes V.W. , Iwasaki M., Jungmann K., Kawall D., Kawamura M., Khazin B.I., Kinde J., Krienen F., Kronkvis I., Lam A., Larsen R., Lee Y.Y., Logashenko I.B., McNabb R., Meng W., Mi J., Miller J.P., Morse W.M., Nikas D., Onderwater C.J.G., Orlov Yu. F., Ozben C., Paley J., Peng Q., Polly C., Pretz J., Prigl R., Putlitz G. zu, Qian T., Redin S.I., Rind O., Roberts B.L., Ryskulov N.M., Sedykh S., Semertzidis Y.K., Shagin P., Shatunov Yu.M., Sichtermann E.P., Solodov E.P., Sossong M., Steinmetz A., Sulak L., Timmermans C., Trofimov A., Urner D., Walter P. von, Warburton D., Winn D., Yamamoto A. and Zimmerman D
Statistical equations and methods applied to the precision muon (g-2) experiment at BNL
Nucl. Inst. Meth. **A579**, 1096-1116, (2007)

142. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G.,

Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
"DAFNE monitored by FINUDA ",
Nucl. Instrum. Meth. **A570** 205-215 (2007).

143. Okada S. ,Beer G. A. ,Bhang H. ,Cargnelli M. ,Chiba J. ,Choi S. ,Curceanu C. O. ,Fukuda Y. ,Hanaki T. , Hayano R. ,Iio M. ,Ishikawa T. ,Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Juhasz B. , Kienle P. ,Marton J. ,Matsuda Y. ,Onishi H. ,Outa H. ,Schmid P. ,Sato M. ,Suzuki S. ,Suzuki T. , Tatsuno H. ,Tomono D. ,Widmann E. ,Yamazaki T. ,Yim H. ,and Zmeskal J. :
"Precision spectroscopy of the kaonic helium $3d \to 2p$ x-ray",
Nucl. Phys. **A 790**, No. 1-4, pp.663c--666c (2007).

144. Kobayashi Y.,Tsuruoka Y.,Kubo K. ,Nonaka H. ,Yamada Y. ,Sakai Y. ,Shoji H. ,Sato W. ,Shinohara A. , Watanabe Y. ,and Matsue H. : *"Mossbauer spectroscopic study of ^{57}Fe species produced by ^{56}Fe(n, γ)^{57}Fe reaction in iron sulfide"*,
J. Radioanal. Nucl. Chem. **272**, 623--626 (2007). *

145. Kojima K. ,Zhang W. ,Kondo M. ,Uchikawa M. ,Namiki K. ,Fujita T. ,Murata M. ,Kobayashi Y. ,and Nishihara H. :
"Synthesis of π-Conjugated Ferrocene-Anthraquinone Alternating Polymers and Their Protonation Reactions",
J. Inorg. Organometal. Polym. Materials **17**, 135--141 (2007). *

146. Yamada M. ,Sato T. ,Miyake M. ,and Kobayashi Y. :
"Temporal evolution of composition and crystal structure of cobalt hexacyanoferrate nano-polymers synthesized in reversed micelles",
J. Colloid Interface Sci. **315**, 369--375 (2007). *

147. Kondo M. ,Uchikawa M. ,Zhang W. ,Namiki K. ,Kume S. ,Murata M. ,Kobayashi Y. ,and Nishihara H. :
"Protonation-Induced Cyclocondensation of 1-Aryl Ethynylanthraquinones: Expanding the π Conjugation",
Angew. Chem. Int. Ed. **46**, 6271--6274 (2007). *

148. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" Study of the (K+,K0) reaction on medium light nuclei close to threshold. ",
Frascati Phys. Ser. **46**, 1215-1224 (2007).

149. Venturelli L. ,Amoretti M. ,Amsler C. ,Bonomi G. ,Carraro C. ,Cesar C. L. ,Charlton M. ,Doser M. , Fontana A. ,Funakoshi R. ,Genova P. ,Hayano R. ,Jorgensen L. V. ,Kellerbauer A. ,Lagomarsino V. , Landua R. ,Lodi Rizzini E. ,Macri M. ,Madsen N. ,Manuzio G. ,Mitchard D. ,Montagna P. ,Posada L. G. , Pruys H. ,Regenfus C. ,Rotondi A. ,Testera G. ,Van der Werf D. P. ,Variola A. ,Yamazaki Y. ,Zurloa N. , and ATHENA C. :
"Protonium production in ATHENA",
Nucl. Instrum. Methods Phys. Res. **B 261,** 40--43 (2007).

150. Shimada K. ,Nagae D. ,Asahi K. ,Inoue T. ,Takase K. ,Kagami S. ,Hatakeyama N. ,Kobayashi Y. , Ueno H. ,Yoshimi A. ,Kameda D. ,Nagatomo T. ,Sugimoto T. ,Kubono S. ,Yamaguchi H. , Wakabayashi Y. ,Hayakawa S. ,Murata J. ,and Kawamura H. :
"Production of spin-polarized ^{17}N beam sing inverse-kinematics low-energy ransfer reactions",
Hyperfine Interact. **180**, 43--47 (2007). *

151. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
"Correlated Lambda d pairs from the K-(stop) A ---> Lambda d A-prime reaction",
Phys. Lett **B654**, 80-86 (2007).

152. Koike T. and Harada T. :
"*Calculation of the ^{3}He(in-flight K^{-}, n) reaction for searching the deeply-bound K^{-}pp state*",
Phys. Lett. **B 652**, 262--268 (2007). *

153. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
"Experimental study of the (K+, K0) interactions on Li-7 close to threshold. ",
Phys. Lett **B649**, 25-30 (2007).

154. Kameda D. ,Ueno H. ,Asahi K. ,Takemura M. ,Yoshimi A. ,Haseyama T. ,Uchida M. ,Shimada K. , Nagae D. ,Kijima G. ,Arai T. ,Takase K. ,Suda S. ,Inoue T. ,Murata J. ,Kawamura H. ,Kobayashi Y. , Watanabe H. ,and Ishihara M. :
"Measurement of the electric quadrupole moment of ^{32}Al",
Phys. Lett. **B 647**, 93--97 (2007). *

155. Urano M. ,Tonishi F. ,Inoue H. ,Saito T. ,Fujiwara T. ,Chiku H. ,Osawa A. ,Goto T. ,Suzuki T. , Sasaki T. ,Kobayashi N. ,Awaji S. ,and Watanabe K. :
"NMR study of the vortex slush phase in organic superconductor κ-(BEDT-TTF)$_2$Cu(NCS)$_2$",
Phys. Rev. **B 76**, 024505-1--024505-4 (2007). *

156. Katzgraber H. G. ,Herisson D. ,Osth M. ,Nordblad P. ,Ito A. ,and Aruga-Katori H. :
"Finite versus zero-temperature hysteretic behavior of spin glasses: Experiment and theory",
Phys. Rev. **B 76**, No. 9, pp.092408-1--092408-4 (2007). *

157. Kojima T. ,Tomono D. ,Ikeda T. ,Ishida K. ,Iwai Y. ,Iwasaki M. ,Matsuda Y. ,Matsuzaki T. ,and Yamazaki Y. :
"Density enhancement of muon beams with tapered glass tubes",
J. Phys. Soc. Jpn. **76**, No. 9, pp.093501-1--093501-3 (2007).

158. Saito T. ,Sasaki T. ,Suzuki T. ,Osawa A. ,Goto T. ,Awaji S. ,Watanabe K. ,and Kobayashi N. :
"High-field magnetic torque measurement in the spin gap system $(CH_3)_2CHNH_3CuCl_3$",
J. Phys. Soc. Jpn. **76**, No. 8, pp.084708-1--084708-7 (2007). *

159. Suzuki T. ,Yamada F. ,Watanabe I. ,Goto T. ,Osawa A. ,and Tanaka H. :
"The effect of randomness on the quantum spin system $Tl_{1-x}K_xCuCl_3$ with x = 0.44 studied by the Zero-field Muon-Spin-Relaxation (ZF-μSR) method",
J. Phys. Soc. Jpn. **76**, No. 7, pp.074704-1--074704-5 (2007). *

160. Kikkawa A., Katsumata K., Honda Z., Watanabe I., Suzuki T., and Matsuzaki T.,
"Gap Formation and Spin Freezing in a Spin-Ladder Material near its Quantum Critical Points Studied by Muon Spin Relaxation",
J.Phys. Soc. Jpn. **76**, 023707-1-4 (2007).

161. Kanada K. ,Saito T. ,Osawa A. ,Goto T. ,and Suzuki T. :
"^{1}H-NMR Study on the Magnetic Order in the Mixture of Two Spin Gap Systems $(CH_3)_2CHNH_3CuCl_3$ and $(CH_3)_2CHNH_3CuBr_3$",
J. Phys. Soc. Jpn. **76**, No. 6, pp.064706-1--064706-3 (2007). *

162. Kanada K. ,Saito T. ,Osawa A. ,Goto T. ,Suzuki T. ,and Manaka H. :
"Impurity-induced magnetic order in the mixture of two spin gap systems $(CH_3)_2CHNH_3CuCl_3$ and $(CH_3)_2CHNH_3CuBr_3$",
J. Phys. Chem. Solids **68**, 2191--2194 (2007). *

163. Hachitani K., Amanuma H., Fukazawa H., Kohori Y., Watanabe I., Koyama K., Kumagai K., Sekine C., and Shirotani I.,
"Sm-Based Filled-Skutterudite Phosphides SmT_4P_{12} (T=Fe,Ru,Os) Studied by ^{31}P-NMR and μSR",
J. Phys. Chem. Soilds **68**, 2080-2083 (2007)

164. Hayashi T. ,Koike S. ,Higami N. ,Hirabayashi K. ,Matsuba H. ,Ogiwara K. ,and Yagi E. :
"Lattice location of hydrogen in β_1-V_2H (tetragonal)",
J. Alloys Compounds **446/447**, 512--515 (2007). *

165. Sugiyama J., Mukai K., Ikedo Y., Russo P. L., Suzuki T., Watanabe I., Brewer J. H., Ansaldo E. J., Chow K. H., Ariyoshi K., and Ohzuku T.,
"Microscopic Magnetic and Structural Nature of Spinel $Li[Li_xMn_{2-x}]O_4$",
Phys. Rev. **B 75**, 174424-1-6 (2007).

166. Kameda D. ,Ueno H. ,Asahi K. ,Takemura M. ,Nagae D. ,Shimada K. ,Yoshimi A. ,Kobayashi Y. , Haseyama T. ,Uchida M. ,Takase K. ,Arai T. ,Inoue T. ,Suda S. ,Murata J. ,Kawamura H. ,Watanabe H. , and Ishihara M. :
"Nuclear moment measurements of Neutron-rich Aluminum Isotopes Using Spin-Polarized RI beams: Determination of the Boundary of the "Island of Inversion",
Proceedings of the 17th International Spin Physics Symposium (SPIN2006) , Tokyo ,2006-- 10 ,American Institute of Physics, New York, pp.845--848 (2007). *

167. Koike T. :
"Cascade calculation of kaonic nitrogen atoms involving the electron refilling process",
Proc. 3rd Asia-Pacific Conf. on Few-Body Problems in Physics (APFB05) , Nakhon Ratchasima , Thailand , 2005-- 7 , World Scientific Publishing Co. Pte. Ltd., Toh Tuck Link, pp.171--174 (2007). *

168. Kameda D. ,Ueno H. ,Asahi K. ,Yoshimi A. ,Haseyama T. ,Kobayashi Y. ,Uchida M. ,Miyoshi H. , Kijima G. ,Takemura M. ,Nagae D. ,Kato G. ,Emori S. ,Oshima S. ,Arai T. ,and Tsukui M. :
"Production of spin-polarized RI beams via projectile fragmentation and the application to nuclear moment measurements", Polarized-Sources and Targets: Proceedings of the 11th International Workshop , Tokyo , 2005-- 11 , World Scientific Publishing , Toh Tuck Link, pp.211--212 (2007).

169. Jonsson P. E. ,Takayama H. ,Aruga-Katori H. ,and Ito A. :
"Absence of phase transition in a magnetic field in the $Fe_{0.55}Mn_{0.45}TiO_3$ Ising spin glass",
J. Magn. Magn. Mater. **310**, 1494--1499 (2007). *

170. Yamazaki T. and Akaishi Y,
"*Basic K^{bar} nuclear cluster, K^-pp, and its enhanced formation in the $p+p\to K^++X$ reaction*",
Phys. Rev. **C 76** (2007) 045201-1~16, ＊

171. Yamazaki T. and Akaishi Y.,
"*The fundamental kaonic nuclear cluster K^-pp – its structure and formation..*"
Prog. Theor. Phys. Suppl. **No.168** (2007) 581~588

172. Yamazaki T. and Akaishi Y.,
"*Emission spectra and invariant masses of Λ and p in the stopped-K^-NN absorption process in ^4He and ^6Li*",
Nucl. Phys. **A 587** (2007) 167~174.

173. Yamazaki T. and Akaishi Y.,
"*Super strong nuclear force caused by migrating K^{bar} mesons – Revival of the Heitler-London-Heisenberg scheme in kaonic nuclear clusters*",
Proc. Jpn. Acad. **B 83** (2007) 144~150.

174. Hirose S., Serra M., Ring P., Otsuka T. and Akaishi Y.,
" *Realistic mean field model based on realistic nuclear forces.*",
Phys. Rev. **C 75** (2007) 024301-1~19

175. Risdiana, Adachi T., Suzuki T., Watanabe I., Koda A., Higemoto W., and Koike Y.,
"μSR Study of Impurity Effects on the Cu-Spin Fluctuations in the Overdoped Regime of $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$",
Physica C **460-462**, 874-875 (2007)

176. Adachi T., Koike Y., Risdiana, Oki N., Mikuni H., Watanabe I., and Pratt F.L.,
"μSR Study of Effects of Rare-Earth Moments on the 1/8 Anomaly in the Excess-Oxygen-Doped High-T_c Cuprates $La_{2-x}A_xCu_{1-y}Zn_yO_{4+\delta}$ (A=Eu,Pr)",
Physica C **460-462**, 1169-1171 (2007).

177. Adachi T., Oki N., Risdiana, yairi S., Koike Y., and Watanabe I.,
"Relationship between the Cu-Spin Fluctuations and Superconductivity in $La_{2-x}Sr_xCu_{1-y}(Zn,Ni)_yO_4$ (x=0.15) Studied by μSR and Magnetic Susceptibility",
Physica C **460-462**, 1172-1173 (2007).

178. Kajiwara T., Watanabe I., Kaneko Y., Takaishi S., Yamashita M., Enomoto M. and Kojima N.,
"Direct Observation of the Ground Spin Alignment of Fe(II)-Fe(III) Single Chain Magnet by Muon Spin Relaxation",
J. Am. Chem. Soc. **129**, 12360-12361 (2007).

2006

179. Hachitani K. ,Fukazawa H. ,Kohori Y. ,Watanabe I. ,Kumagai K. ,Sekine C. ,and Shirotani I. :
"^{31}P-NMR and μSR studies of filled skutterudite compounds SmT_4P_{12} (T: Fe,Os)",
Physica **B 378/380,** 230--231 (2006). *

180. Hachitani K. ,Amanuma H. ,Fukazawa H. ,Kohori Y. ,Watanabe I. ,Kumagai K. ,Sekine C. ,and Shirotani I. :
"^{31}P-NMR and μSR studies of filled skutterudite compounds RRu_4P_{12} (R: Sm, Gd)",
Physica **B 378/380**, 228--229 (2006). *

181. Ohira-Kawamura S. ,Tamura M. ,Kato R. ,and Iwasaki M. :
"Magnetic order and charge separation in 2D distorted triangular lattice systems β' -X $[Pd(dmit)_2]_2$",
Physica **B 374/375**, 122--125 (2006). *

182. Hachitani K. ,Amanuma H. ,Fukazawa H. ,Kohori Y. ,Watanabe I. ,Kumagai K. ,Sekine C. ,and Shirotani I. :
"^{31}P-NMR and μSR studies of filled skutterudite compound $SmRu_4P_{12}$",
J. Phys. Soc. Jpn. **75**, No. Suppl., pp.164--166 (2006). *

183. Ohira-Kawamura S. ,Shimizu Y. ,Kanoda K. ,and Saito G. :
"Spin liquid state in κ-$(BEDT\text{-}TTF)_2Cu_2\$(CN)_3$ studied by muon spin relaxation method",
J. Low Temp. Phys. **142**, 153--158 (2006). *

184. Koike T. :
"*Electron population during the cascade of kaonic nitrogen atoms*",
Proceedings of International Conference on Exotic Atoms and Related Topics (EXA 05) , Vienna , Austria , 2005-- 2 , Austrian Academy of Science Press, Vienna, pp.215--219 (2006). *

185. Shimomura K., Kadono R., Nishiyama K., Watanabe I., Suzuki T., Pratt F.L., Ohishi K., Mizuta M., Saito M., Chow K.H., Hitti B., Lichti R.L., Miyadera H., Ikedo Y., Tanaka H., and Nagamine K,
"Isolated Hydrogen Center in Wide Gap Semiconductors Studied by μSR",
Physica **B 376**, 444-446 (2006).

186. Arnaldi R. ,Banicz K. ,Borer K. ,Castor J. ,Chaurand B. ,Chen W. ,Cicalo C. ,Colla A. ,Cortese P. , Damjanovic S. ,David A. ,De Falco A. ,Devaux A. ,Ducroux L. ,Enyo H. ,Fargeix J. ,Ferretti A. ,Floris M. , Forster A. ,Force P. ,Guettet N. ,Guichard A. ,Hrant G. ,Heuser J. ,Keil M. ,Kluberg L. ,Zheng L. , Lourenco C. ,Lozano J. ,Manso F. ,Martins P. ,Masoni A. ,Neves A. ,Onishi H. ,Oppedisano C. ,Parracho P. , Pillot P. ,Phogosyan T. ,Puddu G. ,Radermacher E. ,Ramalhete P. ,Peter R. ,Scomparin E. ,Seixas J. , Serci S. ,Shahoyan R. ,Sonderegger P. ,Specht H. J. ,Tieulent R. ,Uras A. ,Usai G. ,Veenhof R. ,and Wohri H. :
"First measurement of the rho spectral function in high-energy nuclear collisions",
Phys. Rev. Lett. **96**, No. 16, pp.162302-1--162302-5 (2006). *

187. Kang B.H., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kim E., Kim J.H., Kim M., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Exclusive measurement of the nonmesonic weak decay of Lambda He-5 hypernucleus",
Phys. Rev. Lett. **96,** 062301 (2006)

188. Matsumoto T. ,Egami T. ,Ogata K. ,Iseri Y. ,Yahiro M. ,and Kamimura M. :
"Coulomb breakup effects on the elastic cross section of ^{6}He+^{209}Bi scattering near Coulomb barrier energies",
Phys. Rev. **C 73**, No. 051602, (2006). *

189. Krutenkova A.P., Wanatabe T., Abe D., Fujii Y., Hashimoto O., Kulikov V.V., Nagae T., Nakamura M., Noumi H., Outa H., Saha P.K., Takahashi T., Tamura H.:
"Inclusive pion double charge exchange on ^{16}O above the delta resonance. *"*,
Phys . Rev. **C72**, 037602 (2005)

190. Sato Y., Ajimura S., Aoki K., Bhang H., Hasegawa T., Hashimoto O., Hotchi H., Kim Y.D., Kishimoto T., Maeda K., Noumi H., Ohta Y., Outa H., Park H., Sekimoto M., Shibata T., Takahashi T., Youn M.:
"Mesonic and non-mesonic decay widths of medium-heavy Lambda hypernuclei ",
Phys . Rev. **C71**, 025203 (2005)

191. Tsutsui S. ,Umemura J. ,Kobayashi H. ,Tazaki T. ,Nasu S. ,Kobayashi Y. ,Yoda Y. ,Onodera H. , Sugawara H. ,Matsuda T. D. ,Kikuchi D. ,Sato H. ,Sekine C. ,and Shirotani I. :
"Elastic Properties of Filled-Skutterudite Compounds Probed by Mossbauer Nuclei",
Hyperfine Interact. **168**, 1073--1077 (2006). *

192. Kubo K. ,Kobayashi Y. ,Nonaka H. ,Yamada Y. ,Sakai Y. ,Shoji H. ,and Matsue H. :
"Neutron in-beam Mossbauer spectroscopic study of iron disulfide at room temperature",
Hyperfine Interact. **166**, 425--428 (2006). *

193. Kim M., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kang B.H., Kim E., Kim J.H., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Coincidence exclusive measurement of the nonmesonic weak decay of (Lambda)C-12. ",
AIP Conf. Proc. **870**, 528-530 (2006).

194. Okada S. ,Beer G. A. ,Bhang H. ,Cargnelli M. ,Chiba J. ,Choi S. ,Curceanu C. O. ,Fukuda Y. ,Hanaki T. , Hayano R. ,Iio M. ,Ishikawa T. ,Ishimoto S. ,Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Juhasz B. , Kienle P. ,Marton J. ,Matsuda Y. ,Onishi H. ,Outa H. ,Schmid P. ,Sato M. ,Suzuki S. ,Suzuki T. , Tatsuno H. ,Tomono D. ,Widmann E. ,Yamazaki T. ,Yim H. ,and Zmeskal J. :
"Precision measuremnt of the kaonic helium 3d→2p x-rays",
AIP Conf. Proc. **870**, No. 1, pp.493--495 (2006).

195. Kim M., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kang B.H., Kim E., Kim J.H., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Coincidence measurement of the nonmesonic weak decay of (Lambda)C-12. ",
Phys. Lett. **B641**, 28-33 (2006)

196. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" Search for (Lambda)H-6 and (Lambda)H-7 with the (K-(stop), pi+) reaction. ",
Phys. Lett. **B640**, 145-149 (2006).

197. Sato M. ,Bhang H. ,Chiba J. ,Choi S. ,Fukuda Y. ,Hanaki T. ,Hayano R. ,Iio M. ,Ishikawa T. ,Ishimoto S. , Ishiwatari T. ,Itahashi K. ,Iwai M. ,Iwasaki M. ,Kienle P. ,Kim J. ,Matsuda Y. ,Onishi H. ,Okada S. , Outa H. ,Suzuki S. ,Suzuki T. ,Tomono D. ,Widmann E. ,Yamazaki T. ,and Yim H. :
"Experimental study of strange tribaryons in the $^{4}He(K^{-}_{stop},p)$ reaction",
AIP Conf. Proc. **842**, 480--482 (2006).

198. Miyake Y.,Nishiyama K.,Kawamura N.,Makimura S. ,Strasser P. ,Simomura K. ,Beveridge J. L. , Kadono R. ,Fukuchi K. ,Sato N. ,Ueno K. ,Higemoto W.,Ishida K. ,Matsuzaki T. ,Watanabe I. ,Matsuda Y., Iwasaki M.,Nakamura S. Doornbos J. ,and Nagamine K.:
"Status of J-PARC muon science facility at the year of 2005",
Physica B **374/375**, 484--487 (2006). *

199. Bakule P. ,Matsuda Y. ,Iwasaki M. ,Miyake Y. ,Nagamine K. ,Ikedo Y. ,Simomura K. ,and Strasser P. :
"Pulsed source of ultra low-energy muons at RIKEN-RAL",
Physica **B 374/375**, 456--459 (2006). *

200. Torikai E. ,Ito A. ,Watanabe I. ,and Nagamine K. :
"μSR studies on the response of spin dynamics to applying or removing magnetic field --- Typical Ising spin glass $Fe_{0.05}Mn_{0.05}TiO_3$",
Physica **B 374/375**, 95--98 (2006). *

201. H. Suzuki, H. Aburano, R. Yamauchi, S. Abe, and I. Watanabe,
"μSR Study on CDW Phase Transition in K Metal",
Physica B **374-375**, 402-404 (2006).

202. T. Nakano, K. Goto, F.L. Pratt, I. Watanabe, and Y. Nozue,
"Muonium Formation in Porous Crystal of Zeolite X",
Physica B **374-375**, 359-362 (2006).

203. Risdiana, T. Adachi, Y. Koike, and I. Watanabe,
"μSR Study of the Cu-Spin Dynamics in the Electron-Doped High-T_c Cuprate of $Pr_{0.86}LaCe_{0.14}Cu_{1-y}(Zn,Ni)_yO_4$",
Physica B **374-375**, 218-220 (2006).

204. S. Kuroiwa, Y. Zenitani, M. Yamazawa, Y. Tomita, J. Akimitsu, K. Ohishi, A. Koda, S.R. Saha, R. Kadono, I. Watanabe, and S. Ohira,
"Magnetic and Superconducting Phase Diagram in Oxybromite Cuprate $Ca_{2-x}Na_xCuO_2Br_2$",
Physica B **374-375**, 75-78 (2006).

205. T. Nakano, K. Goto, I. Watanabe, F.L. Pratt, Y. Ikemoto, and Y. Nozue,
"μSR Study on Ferrimagnetic Properties of Potassium Clusters Incorporated into Low Silica X Zeolite",
Physica B **374-375**, 21-25 (2006).

206. Bennett G.W., Bousquet B., Brown H.N., Bunce G., Carey R.M., Cushman P., Danby G.T., Debevec P.T., Deile M., Deng H., Deninger W., Dhawan S.K., Druzhinin V.P., Duong L., Efstathiadis E., Farley F.J.M., Fedotovich G.V., Giron S., Gray F., Grigoriev D., Grosse-Perdekam M., Grossmann A., Hare M., Hertzog D.W., Huang X., Hughes V.W. , Iwasaki M., Jungmann K., Kawall D., Kawamura M., Khazin B.I., Kinde J., Krienen F., Kronkvis I., Lam A., Larsen R., Lee Y.Y., Logashenko I.B., McNabb R., Meng W., Mi J., Miller J.P., Morse W.M., Nikas D., Onderwater C.J.G., Orlov Yu. F., Ozben C., Paley J., Peng Q., Polly C., Pretz J., Prigl R., Putlitz G. zu, Qian T., Redin S.I., Rind O., Roberts B.L., Ryskulov N.M., Sedykh S., Semertzidis Y.K., Shagin P., Shatunov Yu.M., Sichtermann E.P., Solodov E.P., Sossong M., Steinmetz A., Sulak L., Timmermans C., Trofimov A., Urner D., Walter P. von, Warburton D., Winn D., Yamamoto A. and Zimmerman D
Final Report of the Muon E821 Anomalous Magnetic Moment Measurement at BNL.
Phys.Rev.**D73**:072003,(2006)

207. Saito T. ,Osawa A. ,Goto T. ,Suzuki T. ,and Watanabe I. :
"Muon spin rotation and relaxation studies on the solid solution of the two spin-gap systems $(CH_3)_2CHNH_3$-$CuCl_3$ and $(CH_3)_2CHNH_3$-$CuBr_3$",
Phys. Rev. **B 74**, 134423-1--134423-5 (2006). *

208. Hachitani K. ,Fukazawa H. ,Kohori Y. ,Watanabe I. ,Sekine C. ,and Shirotani I. :
"Evidence for magnetic ordering associated with metal-insulator transition in $SmRu_4P_{12}$ studied by muon spin relaxation",
Phys. Rev. **B 73**, 052408-1--052408-4 (2006). *

209. Matsuda Y. ,Bakule P. ,Iwasaki M. ,Matsuzaki T. ,Miyake Y. ,Ikedo Y. ,Strasser P. ,Simomura K. ,Makimura S. ,and Nagamine K. :
"Generation of low-energy muons with laser resonant ionization",
Nucl. Phys. **B** (Proc. Suppl.) **155,** 346--348 (2006). *

210. Attwood D. ,Bell P. ,Bull S. ,McMahon T. ,Wilson J. ,Fernow R. ,Gruber P. ,Jamdagni A. ,Long K. , McKigney E. ,Savage P. ,Curtis-Rouse M. ,Edgecock T. R. ,Ellis M. ,Lidbury J. ,Murray W. ,Norton P. , Peach K. ,Ishida K. ,Matsuda Y. ,Nagamine K. ,Nakamura S. ,Marshall G. M. ,Benveniste S. ,Cline D. , Fukui Y. ,Lee K. ,Pischalnikov Y. ,Holmes S. ,and Bogacz A. :
"The scattering of muons in low-Z materials",
Nucl. Instrum. Methods Phys. Res. **B 251**, 41--55 (2006). *

211. Ishiwatari T. ,Beer G. A. ,Bragadireanu A. M. ,Cargnelli M. ,Curceanu P. C. ,Egger J. P. ,Fuhrmann H. , Guaraldo C. ,Iliescu M. ,Itahashi K. ,Iwasaki M. ,Kienle P. ,Lauss B. ,Lucherini V. ,Ludhova L. , Marton J. ,Mulhauser F. ,Ponta T. ,Schaller L. A. ,Sirghi D. L. ,Strasser P. ,and Zmeslal J. :
"New analysis method for CCD X-ray data",
Nucl. Instrum. Methods Phys. Res. **A 556**, 509--515 (2006). *

212. Hachitani K. ,Fukazawa H. ,Kohori Y. ,Watanabe I. ,Yoshimitsu Y. ,Kumagai K. ,Giri R. ,Sekine C. , and Shirotani I. :
"^{31}P-NMR and μSR studies of filled skutterudite compound $SmFe_4 P_{12}$:evidence for heavy fermion behavior with ferromagnetic ground state",
J. Phys. Soc. Jpn. **75**, No. 12, pp.124717-1--124717-5 (2006). *

213. Hachitani K. ,Amanuma H. ,Fukazawa H. ,Kohori Y. ,Koyama K. ,Kumagai K. ,Sekine C. ,and Shirotani I. :
"Appearance of successive phase transition in $SmRu_4P_{12}$ under high magnetic fields probed by ^{31}P nuclear magnetic resonance",
J. Phys. Soc. Jpn. **75**, No. 12, pp.124712-1--124712-6 (2006). *

214. Suzuki T. ,Fujiwara T. ,Osawa A. ,Goto T. ,Yamada F. ,Tanaka H. ,and Watanabe I. :
"Muon-Spin-Relaxation study on single crystals $Tl_{1-x}K_xCuCl_3$ with x = 0.2",
J. Phys. Soc. Jpn. **75**, No. 2, pp.025001-1--025001-2 (2006). *

215. Fukaya A., Watanabe I., Yamada K., and Nagamine K.,
"Spin Dynamics in a Copper Metaborate CuB_2O_4 Studied by Muon Spin Relaxation",
J.Phys. Soc. Jpn. **75**, 113705-1-4 (2006).

216. Tonishi J. ,Ueda M. ,Suzuki T. ,Osawa A. ,Goto T. ,Adachi T. ,Koike Y. ,Fujita M. ,and Yamada K. :
"*Local structure in single crystals of La-based high T_c cuprates*",
J. Phys.: Con. Ser. **51**, 275--278 (2006). *

217. Fujiwara T. ,Inoue H. ,Osawa A. ,Tsunoda R. ,Goto T. ,Suzuki T. ,Shindo Y. ,Tanaka H. ,Sasaki T. ,Kobayashi N. ,Awaji S. ,and Watanabe K. :
"*Cu-NMR study on the disordered quantum spin magnet with the Bose-glass ground state"*,
J. Phys.: Con. Ser. **51**, 199--202 (2006). *

218. Suzuki T. ,Saito T. ,Sasaki T. ,Osawa A. ,Goto T. ,Awaji S. ,Watanabe K. ,Kobayashi N. ,and Manaka H. :
"Magnetic field effect on the magnetic torque and the magnetostriction in $(CH_3)_2CHNH_3CuCl_3$",
J. Phys.: Con. Ser. **51**, 187--190 (2006). *

219. Inoue H. ,Tani S. ,Hosoya S. ,Suzuki T. ,Goto T. ,Tanaka H. ,Sasaki T. ,and Kobayashi N. :
"^{2}D, $^{35/37}$Cl, $^{63/65}$Cu-NMR Study of the Quantum Spin System NH_4CuCl_3",
AIP Conf. Proc. **850**, 1061--1062 (2006). *

220. Suzuki T. ,Ota T. ,Tonishi J. ,and Goto T. :
"Increase of the sound velocity by magnetic fields in $La_{2-x}Sr_xCuO_4$ around x = 0.220",
AIP Conf. Proc. **850**, 409--410 (2006). *

221. Tonishi J. ,Suzuki T. ,and Goto T. :
"Anomalous Change of Hall Coefficient in Overdoped $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$ around x = 0.2",
AIP Conf. Proc. **850,** 407--408 (2006). *

222. Tomono D. :
"Presicion measurement of the positive muon lifetime at the RIKEN-RAL muon facility",
AIP Conf. Proc. **842**, 906--908 (2006). *

223. Kellerbauer A. ,Amoretti M. ,Bonomi G. ,Bowe P. D. ,Canali C. ,Carraro C. ,Cesar C. L. ,Charlton M. , Doser M. ,Fontana A. ,Fujiwara M. ,Funakoshi R. ,Genova P. ,Hayano R. ,Johnson I. ,Jorgensen L. V. , Lagomarsino V. ,Landua R. ,Lodi Rizzini E. ,Macri M. ,Madsen N. ,Mitchard D. ,Montagna P. , Posada L. G. ,Rotondi A. ,Testera G. ,Variola A. ,Venturelli L. ,van der Werf D. P. ,Yamazaki Y. ,and Zurlo N. :
"Sideband cooling of ions in a non-neutral buffer gas",
Phys. Rev. **A 73**, 062508-1--062508-9 (2006). *

224. Amoretti M. ,Amsler C. ,Bonomi G. ,Bowe P. D. ,Canali C. ,Carraro C. ,Cesar C. L. ,Charlton M. , Doser M. ,Fontana A. ,Fujiwara M. ,Funakoshi R. ,Genova P. ,Hangst J. S. ,Hayano R. ,Johnson I. , Jorgensen L. V. ,Kellerbauer A. ,Lagomarsino V. ,Landua R. ,Lodi Rizzini E. ,Macri M. ,Madsen N. , Manuzio G. ,Mitchard D. ,Montagna P. ,Pruys H. ,Regenfus C. ,Rotondi A. ,Testera G. ,Variola A. , Venturelli L. ,Van der Werf D. P. ,Yamazaki Y. ,Zurlo N. ,and ATHENA C. :
"Progress with cold antihydrogen",
Nucl. Instrum. Methods Phys. Res. **B 247**, 133--137 (2006)
.

225. Bertsche W. ,Boston A. ,Bowe P. D. ,Cesar C. L. ,Chapman S. ,Charlton M. ,Chartier M. ,Deutsch A. , Fajans J. ,Fujiwara M. ,Funakoshi R. ,Gomberoff K. ,Hangst J. S. ,Hayano R. ,Jenkins M. J. ,Jorgensen L. V. , Ko P. ,Madsen N. ,Nolan P. ,Page R. D. ,Posada L. G. ,Povilus A. ,Sarid E. ,Silveira D. M. , van der Werf D. P. ,Yamazaki Y. ,Parker B. ,Escallier J. ,and Ghosh A. :
"A magnetic trap for antihydrogen confinement",
Nucl. Instrum. Methods Phys. Res. **566**, 746--756 (2006). *

226. Zurlo N. ,Amoretti M. ,Amsler C. ,Bonomi G. ,Carraro C. ,Cesar C. L. ,Charlton M. ,Doser M. , Fontana A. ,Funakoshi R. ,Genova P. ,Hayano R. ,Jorgensen L. V. ,Kellerbauer A. ,Lagomarsino V. , Landua R. ,Lodi Rizzini E. ,Macri M. ,Madsen N. ,Manuzio G. ,Mitchard D. ,Montagna P. ,Posada L. G. , Pruys H. ,Regenfus C. ,Rotondi A. ,Testera G. ,Van der Werf D. P. ,Variola A. ,Venturelli L. ,and Yamazaki Y. :
"Production of slow protonium in vacuum",
Hyperfine Interact. **172**, 97--105 (2006).

227. Fujiwara M. ,Andresen G. ,Bertsche W. ,Boston A. ,Bowe P. D. ,Cesar C. L. ,Chapman S. ,Charlton M. ,Chartier M. ,Deutsch A. ,Fajans J. ,Funakoshi R. ,Gill D. R. ,Gomberoff K. ,Hangst J. S. ,Hardy W. N. ,Hayano R. ,Hydomako R. ,Jenkins M. J. ,Jorgensen L. V. ,Kurchaninov L. ,Madsen N. ,Nolan P. ,Olchanski K. ,Olin A. ,Page R. D. ,Povilus A. ,Robicheaux F. ,Sarid E. ,Silveira D. M. ,Storey J. W. ,Thompson R. I. ,van der Werf D. P. ,Wurtele J. S. ,Yamazaki Y. ,and ALPHA Collaboration . :
"Towards antihydrogen confinement with the ALPHA antihydrogen trap",
Hyperfine Interact. **172**, 81--89 (2006).

228. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" A study of the proton spectra following the capture of K- in Li-6 and C-12 with FINUDA. ",
Nucl. Phys. **A775**, 35-50 (2006).

229. Imao H. ,Kawamura N. ,Ishida K. ,Matsuzaki T. ,Matsuda Y. ,Toyoda A. ,and Nagamine K. :
"Dependence of muon-catalyzed d-d fusion on the ortho-para ratio in solid and liquid deuterium",
Phys. Lett. **B 632**, 192--196 (2006). *

230. Kienle P. ,Akaishi Y. ,and Yamazaki T. :
"Momentum correlation in the three-body decay of high-density K^{bar} nuclear clusters: $NNNK^{bar} \rightarrow N + N + \Lambda$",
Phys. Lett. **B 632**, 187--191 (2006). *

231. Dote A., Kanada-En'yo Y., Horiuchi H., Akaishi Y. and Ikeda K.
"*Explicit treatment of tensor force with a method of Antisymmetrized Molecular Dynamics",*
Prog. Theor. Phys. **115** (2006) 1069~1092.＊

232. Watanabe I., Mikuni H., Oki N., Adachi T., Yairi S., Kato M., Koike Y., Pratt F.L., and Nagamine K.,
"μSR Study of the Anomalous Magnetic Behavior in the Excess-Oxygen-Doped $La_{1.6}Nd_{0.4}CuO_{4+\delta}$ around the Hole Concentration of 1/8 per Cu",
Phys. Rev. **B 73**, 134506-1-7 (2006)

233. Kuroiwa S., Takagiwa H., Yamazawa M., Akimitsu J., Ohishi K., Koda A., Kadono R., Higemoto W., and Watanabe I.,
"Possible Weak Magnetism in MB_6 (M : Ca, Ba) Probed by Muon Spin Relaxation and Muon Level-Clossing Resonance",
Science and Technology of Advanced Materials **7**, 12-16 (2006).

234. Shimomura K., Kadono R., Nishiyama K., Watanabe I., Suzuki T., and Pratt F.L.,
"Origin of n Type conductivity in Wide Gap Semiconductors Studied by μSR",
Nucl. Phys. B (Proc Suppl) **155**, 378-380 (2006).

2005

235. Jonsson P. E. ,Aruga-Katori H. ,Ito A. ,and Takayama H. :
"Field effects in the Ising spin glass $Fe_{0.55}Mn_{0.45}TiO_3$---Absence of spin-glass transition in a magnetic field",
Prog. Theor. Phys. Suppl. , **No. 157**, pp.38--41 (2005). *

236. Tanaka H. ,Nagamine K. ,Nakamura S. ,and Ishida K. :
"Radiography measurements of the internal structure of Mt. West Iwate with near-horizontal cosmic-ray muons and future developments",
Nucl. Instrum. Methods Phys. Res. **A 555,** 164--172 (2005). *

237. Tanaka H. ,Nagamine K. ,Miyadera H. ,Simomura K. ,Ikedo Y. ,Nishiyama K. ,and Ishida K. :
"Construction and Performance of 128-channel Segmented pulsed μSR and μe detection system at Dai Omega",
Nucl. Instrum. Methods Phys. Res. **A 554**, 201--211 (2005). *

238. Keil M. ,Banicz K. ,Floris M. ,Heuser J. ,Lourenco C. ,Onishi H. ,Radermacher E. ,and Usai G. :
"Radiation damage effects in the NA60 silicon pixel detectors",
Nucl. Instrum. Methods Phys. Res. **A 552**, No. 1-2, pp.239--243 (2005). *

239. Banicz K. ,David A. ,Floris M. ,Heuser J. ,Keil M. ,Lourenco C. ,Onishi H. ,Radermacher E. ,Shahoyan R. , and Usai G. :
"Operation and performance of the NA60 silicon pixel telescope",
Nucl. Instrum. Methods Phys. Res. **A 539**, No. 1-2, pp.137--145 (2005). ＊

240. Nagamine K. ,Tanaka H. ,Nakamura S. ,Ishida K. ,Hasimoto M. ,Shinotake A. ,Naito M. ,and Hatanaka A. :
"Probing the inner structure of blast Furnaces by cosmic-ray muon radiography",
Proc. Jpn. Acad., Ser. **B 81**, No. 7, pp.257--260 (2005). *

241. Nemura H. ,Shinmura S. ,Akaishi Y. ,and Khin-Swe- M. :
"Fully coupled channel approach to doubly strange s-shell hypernuclei",
Phys. Rev. Lett. **94**, 202502-1--202502-4 (2005).

242. Beer G. A. ,Bragadireanu A. M. ,Cargnelli M. ,Curceanu-Petrascu C. ,Egger J. P. ,Fuhrmann H. , Guaraldo C. ,Iliescu M. ,Ishiwatari T. ,Itahashi K. ,Iwasaki M. ,Kienle P. ,Koike T. ,Lauss B. , Lucherini V. ,Ludhova L. ,Marton J. ,Mulhauser F. ,Ponta T. ,Schaller L. A. ,Seki R. ,Sirghi D. L. ,Sirghi F. , and Zmeskal J. :
"Measurement of the Kaonic Hydrogen X-Ray Spectrum",
Phys. Rev. Lett. **94**, No. 21, pp.212302-1--212302-4 (2005). *

243. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" Evidence for a kaon-bound state K- p p produced in K- absorption reactions at rest. ",
Phys. Rev. Lett. **94**, 212303 (2005).

244. Saha P.K., Fukuda T., Imoto W., Ahn J.K., Ajimura S., Aoki K., Bhang H.C., Fujioka H., Hotchi H., Hwang J.I., Itabashi T., Kang B.H., Kim H.D., Kim M.J., Kishimoto T., Krutenkova A., Maruta T., Miura Y., Miwa K., Nagae T., Noumi H., Outa H., Ohtaki T., Sakaguchi A., Sato Y., Sekimoto M., Shimizu Y., Tamura H., Tanida K., Toyoda A., Ukai M., Yim H.J.:
" Production of the neutron-rich hypernucleus (Lambda) Li-10 in the (pi-, K+) double charge-exchange reaction. ",
Phys . Rev. Lett **94**, 052502 (2005)

245. Agnello M., Andronenkov A., Beer G. , Benussi L., Bertani M. , Bhang H.C. , Bianco S., Bonomi G., Botta E., Bregant M., Bressani T, Busso L., Calvo D., Camerini P., Caponero M., Dalena B., De Mori F. , D'Erasmo G., Elia D., Fabbri F.L., Feliciello A., Filippi A., Fiore E.M. , Fontana A., Fujioka H., Gianotti P., Grion N., Hartmann O., Kang B., Krasnoperov A., Lee Y., Lenti V., Lucherini V., Manzari V., Marcello S., Maruta T., Mirfakhrai N., Montagna P., Morra O., Nagae T., Nakajima D., Outa H., Pace E., Palomba M., Pantaleo A., Panzarasa A., Paticchio V., Piano S., Pompili F., Rui, R., Sekimoto M., Simonetti G., Tereshchenko V., Toyoda A., Wheadon R., Zenoni A.:
" First results on (Lambda)C-12 production at DAPhiNE. ",
Phys. Lett. **B622**, 35-44 (2005)

246. Akaishi Y. ,Dote A. ,and Yamazaki T. :
"Strange tribaryons as K-mediated dense nuclear systems",
Phys. Lett. **B 613**, 140--147 (2005). *

247. Tomono D. ,Nakamura S. ,Matsuda Y. ,Iwasaki M. ,Glen M. ,Ishida K. ,Matsuzaki T. ,Watanabe I. , Sakamoto S. ,and Nagamine K. :
"Precise muon lifetime measurement with a pulsed beam at the RIKEN-RAL muon facility",
Nucl. Phys. B (Proc. Suppl.) 149, 341--343 (2005). *

248. Zmeskal J. ,Beer G. A. ,Bragadirean A. M. ,Cargnelli M. ,Curceanu(Petrascu) C. ,Egger J. P. , Fuhrmann H. ,Guaraldo C. ,Iliescu M. ,Ishiwatari T. ,Itahashi K. ,Iwasaki M. ,Kienle P. ,Lauss B. , Lucherini V. ,Ludhova L. ,Marton J. ,Mulhauser F. ,Ponta T. ,Schaller L. A. ,Seki R. ,Sirghi D. L. ,and Sirghi F. :
"The DEAR experiment - first results on kaonic hydrogen",
Nucl. Phys. **A 754**, 369c--374c (2005). *

249. Okada S., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kang B.H., Kim E., Kim J.H., Kim M., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Pi0 decay branching ratios of He-5-Lambda and C-12-Lambda hypernuclei. ",
Nucl. Phys. **A754**, 178-183 (2005)

250. Kameoka S., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kang B.H., Kim E., Kim J.H., Kim M., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Measurement of the pi- decay width of hyper He-5-Lambda. ",
Nucl. Phys. **A754**, 173-177 (2005)

251. Maruta T., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang, Kameoka S., J.I., Kang B.H., Kim E., Kim J.H., Kim M., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Proton asymmetry in nonmesonic weak decay of light hypernuclei. ",
Nucl. Phys. **A754**, 168-172 (2005)

252. Outa H., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kang B.H., Kim E., Kim J.H., Kim M., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okada S., Okayasu Y., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Hypernuclear weak decay experiments at KEK: n n and n p coincidence measurement. ",
Nucl. Phys. **A754**, 157-167 (2005)

253. Miura Y., Ajimura S., Fujii Y., Fukuda T., Hashimoto O., Hotchi H., Imai K., Imoto W., Kakiguchi Y., Kameoka S., Krutenkova A., Maruta T., Matsumura A., Miwa K., Mizunuma K., Nakamura S.N., Nagae T., Nomura H., Noumi H., Outa H., Saha P.K., Saitoh T., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Ukai M., Yamauchi H.:
" gamma spectroscopy of (Lambda)B-11 ",
Nucl. Phys. **A754**, 75-79 (2005)

254. Tamura H., Ajimura S., Akikawa H., Alburger D.E., Aoki K., Banu A., Chrien R.E., Franklin G.B., Franz J., Fujii Y., Fukao Y., Fukuda T., Hashimoto O., Hasegawa T, Hiyama E., Hotchi H., Imai K., Imoto W., Kakiguchi Y., Kameoka M., Kishimoto T., Krutenkova A., Maruta T., Matsumura A., May M., Minami S., Miura Y., Miwa K., Miyoshi T., Mizunuma K., Nagae T., Nakamura S.N., Nakazawa K., Niiyama M., Nomura H., Noumi H., Okayasu Y., Ota S., Ohtaki T., Outa H., Pile P., Quinn B.P., Rusek A., Saha P.K., Sato Y., Saitoh T., Sekimoto M., Sutter R., Takahashi H., Takahashi T., Tang L., Tanida K., Terashima S., Togawa M., Toyoda A., Ukai M., Yamauchi H., Yuan L., Zhou S.H.:
"gamma-ray spectroscopy in Lambda hypernuclei ",
Nucl. Phys. **A754**, 58-69 (2005)

255. Nemura H. :
"Exotic structures of light hypernuclei",
AIP Conf. Proc. 768, 284--290 (2005). *

256. Sekiguchi K. ,Sakai H. ,Witala H. ,Glockle W. ,Golak J. ,Hatanaka K. ,Hatano M. ,Itoh K. ,Kamada H., Kuboki H. ,Maeda Y. ,Nogga A. ,Okamura H. ,Saito T. ,Sakamoto N. ,Sakemi Y. ,Sasano M. ,Shimizu Y. , Suda T. ,Tamii A. ,Uesaka T. ,Wakasa T. ,and Yako K. :
"Resolving the Discrepancy of 135 MeV pd Elastic Scattering Cross Sections and Relativistic Effects",
Phys. Rev. Lett. **95**, 162301-1--162301-4 (2005). *

257. Jonsson P. E. ,Takayama H. ,Aruga-Katori H. ,and Ito A. :
"Dynamical breakdown of the Ising spin-glass order under a magnetic field",
Phys. Rev. **B 71**, 180412-1--180412-4 (2005). *

258. Suzuki T. ,Itahashi K. ,Iwasaki M. ,Matsuda Y. ,Okada S. ,Outa H. ,Sato M. ,Strasser P. ,Tomono D. , and Yamazaki T. :
"A search for deeply bound kaonic nuclear states",
Nucl. Phys. **A 754,** 375c--382c (2005). *

259. Grassi M. ,Ishida K. ,and Semertzidis Y. :
"Summary of Working Group 4: intense muon physics",
Nucl. Phys. B (Proc. Suppl.) **149**, 329--336 (2005).

260. Ishida K. ,Nagamine K. ,Matsuzaki T. ,and Kawamura N. :
"Muon catalyzed fusion",
Nucl. Phys. B (Proc. Suppl.) **149**, 348--350 (2005).

261. Miyadera H. ,Nagamine K. ,Simomura K. ,Ikedo Y. ,Tanaka H. ,Nishiyama K. ,and Ishida K. :
"Intense surface muon generation using large solid angle axial focusing muon channel",
Nucl. Phys. B (Proc. Suppl.) **149**, 351--353 (2005).

262. Strasser P. ,Nagamine K. ,Matsuzaki T. ,Ishida K. ,Matsuda Y. ,and Iwasaki M. :
"Muonic atoms of radioactive nuclei",
Nucl. Phys. B (Proc. Suppl.) **149**, 390--392 (2005).

263. Miyake Y. ,Kawamura N. ,Makimura S. ,Strasser P. ,Simomura K. ,Nishiyama K. ,Beveridge J. L. ,Kadono R. , Sato N. ,Fukuchi K. ,Nagamine K. ,Higemoto W. ,Ishida K. ,Matsuzaki T. ,Watanabe I. ,Matsuda Y. , Iwasaki M. ,and Nakamura S. :
"J-PARC muon science facility with use of 3 GeV proton beam",
Nucl. Phys. B (Proc. Suppl.) **149**, 393--395 (2005).

264. Otsuka T., Suzuki T., Fujimoto R., Grawe H. and Akaishi Y.,
” *Evolution of nuclear shells due to the tensor force.”,*
Phys. Rev. Lett. **95** (2005) 232502-1~4 ＊

265. Akaishi Y.,
“*Kaonic helium atoms in relation to kaonic nuclear bound states.”,*
Proceedings of EXA05 (2005) 45~53, Stefan Meyer Institut, Vienna, February 21-25, 2005

266. Serra M., Otsuka T., Akaishi Y., Ring P. and Hirose S.,
” *Relativistic mean field models and nucleon-nucleon interactions”,*
Prog. Theor. Phys. **113** (2005) 1009~1046

267. Koike Y., Yamazaki M., Kawamata T., Takahashi N.,Oki N., Yairi S., Adachi T., Noji T., Kudo K., Nishizaki T., Kobayashi N., Watanabe I., and Nagamine K.,
"Field-Induced and Impurity-Induced Magnetic Order in $La_{2-x}Sr_xCuO_4$ Studied by the Thermal Conductivity and μSR",
Int. J. Mod. Phys. B **19**, 181-184 (2005).

268. Koike Y., Adachi T., Oki N., Risdiana, Yamazaki M., Kawamata T., Noji H., Kudo K., Kobayashi N., Watanabe I., and Nagamine K.,
"μSR and Thermal Conductivity Studies on Inhomogeneity of the Impurity- and Field-Induced Magnetism and Superconductivity in High-T_c Cuprates",
Physica C **426**, 189-195 (2005).

269. Risdiana, Adachi T., Koike Y., Watanabe I., and Nagamine K.,
"Absence of the Impurity-Induced Magnetic Order in the Electron Doped High-T_c Cuprates $Pr_{0.86}LaCe_{0.14}Cu_{1-y}(Zn,Ni)_yO_4$",
Physica C **426**, 355-359 (2005).

270. Hino A., Fujita M., Watanabe I., and Yamada K.,
"Impurity Effects on Spin Correlations in Electron-Doped $Pr_{1-x}LaCe_xCu_{1-y}Zn_yO_4$ by a μSR study",
Physica C **426**, 309-314 (2005).

271. Cargnelli M. ,Beer G. A. ,Bragadirean A. M. , Curceanu(Petrascu) C. ,Egger J. P. ,Fuhrmann H. , Guaraldo C. ,Iliescu M. ,Ishiwatari T. ,Itahashi K. ,Iwasaki M. ,Kienle P. ,Lauss B. ,Lucherini V. , Ludhova L. ,Marton J. ,Mulhauser F. ,Ponta T. ,Schaller L. A. ,Seki R. ,Sirghi D. L. ,and Sirghi F. and Zmeskal J.:
Kaonic hydrogen measurement with DEAR at DAPHNE.
Int.J.Mod.Phys.**A20:**341-348,(2005).

272. Cortina-Gil D., Fernandez-Vazquez J., Benlliure J., Aumann T., Datta Pramanik U., Geissel H., Gerl J., Hammache F., Mandal S., Munzenberg G., Ohtsubo T., Suemmerer, K. Weick H., Baumann T., Borge M.J.G., Fraile L.M., Prezado Y., Chulkov L.V., Forssen C., Jonson B., Markenroth K., Meister M., Itahashi K., Janik R., Mocko M., Sitar B., Strmen P., Szarka I., Ozawa A., Riisager K., Scheit H., Schneider R., Stolz A., Schrieder G. and Simon H.,
"Structure of neutron-rich oxygen isotopes",
J. Phys. **G31**, S1629-S1632 (2005).

273. Okada S., Ajimura S., Aoki K., Banu A., Bhang H., Fukuda T., Hashimoto O., Hwang J.I., Kameoka S., Kang B.H., Kim E., Kim J.H., Kim M., Maruta T., Miura Y., Nagae T., Nakamura S.N., Noumi H., Okayasu Y., Outa H., Park H., Saha P.K., Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Tshoo K., Tsukada K., Wananabe T., Yim H.J.:
" Nucleon-nucleon coincidence measurement in the non-mesonic weak decay of He-5-Lambda and C-12-Lambda hypernuclei. ",
Nucl. Phys. **A752**, 196-199 (2005)

274. Outa H.:
"Experiments on hypernuclear weak decays. ",
International School of Physics 'Enrico Fermi': Summer Course on Hadronic Physics, Varenna, Lake Como, Italy, Published in *Varenna 2004, Hadron physics* 219-258

2004

275. Curceanu C. ,Beer G. A. ,Bragadireanu A. M. ,Cargnelli M. ,Egger J. -. ,Fuhrmann H. ,Guaraldo C. , Iliescu M. ,Ishiwatari T. ,Itahashi K. ,Iwasaki M. ,Lauss B. ,Lucherini V. ,Ludhova L. ,Marton J. , Mulhauser F. ,Ponta T. ,Schaller L. A. ,Seki R. ,Sirghi D. ,Sirghi F. ,Strasser P. ,and Zmeskal J. :
"Last results from the DEAR experiment at DAΦNE",
AIP Conf. Proc. **717**, 175--179 (2004).

276. Koriyama A. ,Ishizaki M. ,Ozawa T. C. ,Tanigichi T. ,Nagata Y. ,Samata H. ,Kobayashi Y. ,and Noro Y. :
"Magnetism of $CaRuO_3$ crystal",
J. Alloys Compounds 372, 58--64 (2004). ＊

277. Ueno H. ,Asahi K. ,Ogawa H. ,Kameda D. ,Miyoshi H. ,Yoshimi A. ,Watanabe H. ,Shimada K. ,Sato W. , Yoneda K. ,Imai N. ,Kobayashi Y. ,Ishihara M. ,and Wolf-Dieter S. :
"Measurement of nuclear moments in the region of light neutron-rich nuclei",
Nucl. Phys. **A 738**, 211--215 (2004). *

278. Cortina-Gil D. ,Fernandez-Vazquez J. ,Aumann T. ,Baumann T. ,Benlliure J. ,Borge M. J. , Chulkov L. V. ,DattaPramanik U. ,Forssen C. ,Fraile L. M. ,Geissel H. ,Gerl J. ,Hammache F. ,Itahashi K. , Janik R. ,Jonson B. ,Mandal S. ,Markenroth K. ,Meister M. ,Mocko M. ,Munzenberg G. ,Ohtsubo T. , Ozawa A. ,Prezado Y. ,Privora V. ,Riisager K. ,Scheit H. ,Schneider R. ,Schreider G. ,Simon H. ,Sitar B. , Stolz A. ,Strmen P. ,Summerer K. ,Szarka I. ,and Weick H. :
"Shell structure of the near-dripline nucleus ^{23}O",
Phys. Rev. Lett. **93**, No. 6, pp.062501-1--062501-4 (2004). *

279. Suzuki K. ,Fujita M. ,Geissel H. ,Gilg H. ,Gillitzer A. ,Hayano R. S. ,Hirenzaki S. ,Itahashi K. ,Iwasaki M. , Kienle P. ,Matos M. ,Munzenberg G. ,Ohtsubo T. ,Sato M. ,Shindo M. ,Suzuki T. ,Weick H. , Winkler M. ,Yamazaki T. and Yoneyama T. :
"Precision Spectroscopy of Pionic 1s States of Sn Nuclei and Evidence for Partial Restoration of Chiral Symmetry in the Nuclear Medium",
Phys. Rev. Lett. **92**, No. 7, pp.072302-1--072302-4 (2004). *

280. Guaraldo C. ,Beer G. A. ,Bragadireanu A. M. ,Cargnelli M. ,Curceanu C. ,Egger J. -. ,Fuhrman H. , Iliescu M. ,Ishiwatari T. ,Itahashi K. ,Iwasaki M. ,Lauss B. ,Lucherini V. ,Ludhova L. ,Marton J. , Mulhauser F. ,Ponta T. ,Schaller L. A. ,Seki R. ,Sirghi D. ,Sirghi F. ,Strasser P. ,and Zmeskal J. :
"First results on kaonic hydrogen from the DEAR experiment",
Eur. Phys. J. **A 19**, 185--188 (2004). *

281. Miller J. P. ,Carey R. M. ,Logashenko V. ,Lynch K. R. ,Roberts B. L. ,Silenko A. ,Bennett G. , Lazarus D. M. ,Leipuner L. B. ,Marciano W. ,Meng W. ,Morse W. M. ,Prigl R. ,Semertzidis Y. K. , Balakin V. ,Bazhan A. ,Dunikov A. ,Khazin B. ,Khriplovich I. B. ,Sylvestrov G. ,Orlov Y. ,Jungmann K. , Debevec P. T. ,Hertzog D. W. ,Onderwater C. J. ,Ozben C. S. ,Stephenson E. ,Auzinsh M. ,Cushman P. , McNabb R. ,Shafer-Ray N. ,Yoshimura K. ,Aoki A. ,Kuno Y. ,Sato A. ,Iwasaki M. ,and Farley F. J. :
"A New Experiment to Measure the Muon Electric Dipole Moment",
AIP Conf. Proc. **698**, 196--199 (2004).

282. Kawamura N. ,Nagamine K. ,Matsuzaki T. ,Ishida K. ,Nakamura S. ,Matsuda Y. ,Tanase M. ,Kato M. , Sugai H. ,Kudo K. ,Takeda N. ,and Eaton G. H. :
"Anomalous temperature-dependent phenomena of muon catalyzed fusion in solid deuterium and tritium mixtures",
Prog. Theor. Phys. Suppl. , No. **154**, pp.233--240 (2004). *

283. Matsuzaki T. ,Nagamine K. ,Ishida K. ,Kawamura N. ,Matsuda Y. ,Imao H. ,Iwasaki M. ,Nakamura S. , Kato M. ,Sugai H. ,Tanase M. ,Kudo K. ,Takeda N. ,and Eaton G. H. :
"Strong n-α correlations observed in muon catalyzed t-t fusion reactions",
Prog. Theor. Phys. Suppl. , No. 154, pp.225--232 (2004). *

284. Ohira-Kawamura S. ,Tamura M. ,Kato R. ,Watanabe I. ,and Iwasaki M. :
"Muon spin relaxation study of the magnetic transition in a two-dimensional distorted triangular lattice β'-$(CH_3)_4P[Pd(dmit)_2]_2$",
Phys. Rev. **B 70**, 220404-1--220404-4 (2004). *

285. Adachi T., Yairi S., Koike Y., Watanabe I., and Nagamine K.,
"Muon-Spin-Relaxation and Magnetic Susceptibility Studies of the Effects of Magnetic Impurity Ni on the Cu-Spin Dynamics and Superconductivity in $La_{2-x}Sr_xCu_{1-y}Ni_yO_4$ around x=0.13",
Phys. Rev. B **70**, 060504-1-4 (R) (2004).

286. Adachi T., Yairi S., Takahashi K., Koike Y., Watanabe I., and Nagamine K.,
"Muon-Spin-Relaxation and Magnetic Susceptibility Studies of the Effects of Non-Magnetic Impurities on the Cu-Spin Dynamics and Superconductivity in $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$ around x=0.115",
Phys. Rev. B **69**, 184507-1-10 (2004).

287. Yamanaka N. ,Kino Y. ,and Ichimura A. :
"Wave-packet analysis of multichannel resonances in positron scattering by a helium ion",
Phys. Rev. **A 70**, 62701-1--062701-5 (2004). *

288. Suzuki T. ,Bhang H. ,Franklin G. ,Gomikawa K. ,Hayano R. ,Hayashi T. ,Ishikawa K. ,Ishimoto S. , Itahashi K. ,Iwasaki M. ,Katayama T. ,Kondo Y. ,Matsuda Y. ,Nakamura T. ,Okada S. ,Outa H. ,Quinn B. , Sato M. ,Shindo M. ,So H. ,Strasser P. ,Sugimoto T. ,Suzuki K. ,Suzuki S. ,Tomono D. , Vinodkumar A. M. ,Widmann E. ,Yamazaki T. ,and Yoneyama T. :
"Discovery of a strange tribaryon S^0 (3115) in ^4He(stopped K^-, p) reaction",
Phys. Lett. **B 597**, 263--269 (2004). *

289. Okada S. ,Ajimura S. ,Aoki K. ,Banu A. ,Bhang H. ,Fukuda T. ,Hashimoto O. ,Hwang J. ,Kameoka S. ,Kang B. ,Kim E. ,Kim J. ,Kim M. ,Maruta T. ,Miura Y. ,Miyake Y. ,Nagae T. ,Nakamura M. ,Nakamura S. ,Noumi H. ,Okayasu Y. ,Outa H. ,Park H. ,Saha P. K. ,Sato Y. ,Sekimoto M. ,Takahashi T. ,Tamura H. ,Tanida K. ,Toyoda A. ,Tsukada K. ,Watanabe T. ,and Yim H. :
"Neutron and proton energy spectra from the non-mesonic weak decays of $^5{}_{\Lambda}He$ and $^{12}{}_{\Lambda}C$",
Phys. Lett. **B 597**, 249--256 (2004). *

290. Ishiwatari T. ,Beer G. ,Bragadireanu A. M. ,Cargnelli M. ,Curceanu(Petrascu) C. ,Egger J. -. , Fuhrmann H. ,Guaraldo C. ,Kienle P. ,Koike T. ,Iliescu M. ,Itahashi K. ,Iwasaki M. ,Lauss B. , Lucherini V. ,Ludhova L. ,Marton J. ,Mulhauser F. ,Ponta T. ,Schaller L. A. ,Seki R. ,Sirghi D. L. , Sirghi F. ,Strasser P. ,and Zmeskal J. :
"Kaonic nitrogen X-ray transition yields in a gaseous target",
Phys. Lett. **B 593**, 48--54 (2004). *

291. Strasser P. ,Nagamine K. ,Matsuzaki T. ,Ishida K. ,Matsuda Y. ,Itahashi K. ,and Iwasaki M. :
"Progress in muonic atom spectroscopy with RI beams",
Nucl. Phys. **A 746**, 621c--624c (2004). *

292. Ohira-Kawamura S. ,Tamura M. ,Kato R. ,Watanabe I. ,and Iwasaki M. :
"μSR study on magnetic property of [Pd(dmit)$_2$] salts",
J. Phys. IV **114**, 355--356 (2004). *

293. Bakule P. and Morenzoni E. :
"Generation and applications of slow polarized muons",
Contemp. Phys. 45, 203--225 (2004). *

294. Matsuda Y. ,Bakule P. ,Strasser P. ,Ishida K. ,Matsuzaki T. ,Iwasaki M. ,Miyake Y. ,Shimomura K. , Makimura S. ,and Nagamine K. :
"Recent development of a point positive muon source at the RIKEN-RAL muon facility",
AIP Conf. Proc. **721**, 313--316 (2004). *

295. Tomono D. ,Nakamura S. ,Matsuda Y. ,Iwasaki M. ,Mason G. ,Ishida K. ,Matsuzaki T. ,Watanabe I. ,Sakamoto S. ,and Nagamine K. :
"Precise measurement of the positive muon lifetime at the RIKEN-RAL muon facility",
AIP Conf. Proc. **721**, 293--296 (2004). *

296. Ishida K. :
"Non-particle physics with intense muon beams",
AIP Conf. Proc. **721**, 77--82 (2004).

297. Strasser P. ,Nagamine K. ,Matsuzaki T. ,Ishida K. ,Matsuda Y. ,Itahashi K. ,and Iwasaki M. :
"Radioactive muonic atom studies with intense muon beams",
AIP Conf. Proc. **721**, 309--312 (2004).

298. Miyadera H. ,Nagamine K. ,Simomura K. ,Nishiyama K. ,Tanaka H. ,Ikedo Y. ,and Ishida K. :
"High intensity surface muon beam using a large acceptance axial focusing channel",
AIP Conf. Proc. **721,** 342--345 (2004).

299. Simomura K. ,Ishida K. ,Miyadera H. ,and Nagamine K. :
"*Super Omega: new concepts of super intense surface muon beam"*,
AIP Conf. Proc. **721**, 346--349 (2004).

300. Sasao J. ,Abe D. ,Akikawa H. ,Araki K. ,Bhang H. C. ,Endo T. ,Fujii Y. ,Fukuda T. ,Hashimoto O. ,Imai K. , Hotchi H. ,Kakiguchi Y. ,Kim J. ,Kim Y. D. ,Miyoshi T. ,Murakami T. ,Nagae T. ,Noumi H. ,Outa H. , Ozawa K. ,Saitoh T. ,Sato Y. ,Satoh S. ,Sawafta R. ,Sekimoto M. ,Takahashi T. ,Tamura H. ,Tang L. , Tanida K. ,Xia H. H. ,Zhou S. H. ,and Zhu L. :
"${}^{7}{}_{\Lambda}$Li ground-state spin determined by the yield of γ-rays subsequent to weak decay",
Phys. Lett. B **579**, 258--264 (2004). *

301. Yamanaka N. and Kino Y. :
"Antihydorogen formation in antiproton-positronium collisions",
Nucl. Instrum. Methods Phys. Res. **B 214**, 40--43 (2004). *

302. Dote A., Horiuchi H., Akaishi Y. and Yamazaki T.,"
Kaonic nuclei studied based on a new framework of antisymmetrized molecular dynamics",
Phys. Rev. **C 70** (2004) 044313-1~11.＊

303. Saha P.K., Noumi H., Abe D., Ajimura S., Aoki K., Bhang H.C., Dobashi K., Endo T., Fujii Y., Fukuda T., Guo H.C., Hashimoto O., Hotchi H., Imai K., Kim E.H., Kim K.H., Kishimoto T., Krurenkova A., Maeda K., Nagae T., Nakamura M., Outa H., Saito T., Sakaguchi A., Sato Y., Sawafta R., Sekimoto M., Shimizu Y., Takahashi T., Tamura H., Tang L., Tanida K., Watanabe T., Yim H.J.:
" Study of the Sigma-nucleus potential by the (pi-, K+) reaction on medium-to-heavy nuclear targets ",
Phys. Rev. **C70**, 044613 (2004)

304. Yamazaki T., Dote A. and Akaishi Y.,
"*Invariant-mass spectroscopy for condensed single- and double- Kbar nuclear clusters to be formed as residues in relativistic heavy-ion collisions",*
Phys. Lett. **B 587** (2004) 167~174.＊

305. Dote A., Horiuchi H., Akaishi Y. and Yamazaki T.,
"*High-density Kbar nuclear systems with isovector deformation.",*
Phys. Lett. **B 590** (2004) 51~56

306. Akaishi Y.,
"*Deeply bound mesonic nuclear states",*
Frascati Physics Series Vol. XXXVI (2004) 217 ~ 224. DAΦNE 2004, Frascati, June 7-11, 2004

307. Akaishi Y.,
"*Real-space and model-space descriptions of nuclei",*
Nucl. Phys. **A 738** (2004) 80c~86c

308. Takemoto H., Fukushima M., Chiba S. , Horiuchi H., Akaishi Y. and Tohsaki A.,
" *Clustering phenomena in nuclear matter below the saturation density",*
Phys. Rev. **C 69** (2004) 035802-1~9

309. Kanada-En'yo Y. and Akaishi Y.,
"*New effective nuclear forces with a finite-range three-body term and their application to anti-symmetrized molecular dynamics",*
Phys. Rev. **C 69** (2004) 034306-1~11

310. Kiniwa D., Nakano T., Pratt F.L., Watanabe I., Ikenoto Y., and Nozue Y.,
"μSR Study of Ferromagnetism in Potassium Clusters Incorporated in Zeolite LTA",
J. Mag. Mag. Matt. **272-276**, e117-e119 (2004).

311. Watanabe I., Adachi T., Yairi S., Koike Y., and Nagamine K.,
"Precise Muon-Spin-Relaxation Measurements on the Cu-Spin Dynamics in $La_{2-x}Sr_xCuO_4$",
J. Mag. Mag. Matt. **272-276**, e1061-e1062 (2004)

312. Hachitani K., Fukazawa H., Kohori Y., Yoshimitsu Y., Kumagai K., Watanabe I., Giri R., Sekine C., and Shirotani I.,
"^{31}P-NMR and μSR Studies of Filled Skutterudite System SmT_4P_{12} (T = Fe, Ru and Os)",
Journal of the Institute of Pure and Applied Physics **CS 5**, 37-40 (2004).

313. Miura Y., Ajimura S., Fujii Y., Fukuda T., Hashimoto O., Hotchi H., Imai K., Imoto W., Kakiguchi Y., Kameoka S., Krutenkova A., Maruta T., Matsumura A., Miwa K., Miyoshi T., Mizunuma K., Nakamura S.N., Nagae T., Nomura H., Noumi H., Otaki T., Outa H., Saha P.K., Saitoh T, Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Ukai M., Yamauchi H.:
" G-factor of Lambda in the hypernuclei studied from B(M1) measurement ",
Prog. Theor. Phys. Suppl. **156**, 160-162 (2004)

314. Miura Y., Ajimura S., Fujii Y., Fukuda T., Hashimoto O., Hotchi H., Imai K., Imoto W., Kakiguchi Y., Kameoka S., Krutenkova A., Maruta T., Matsumura A., Miwa K., Miyoshi T., Mizunuma K., Nakamura S.N., Nagae T., Nomura H., Noumi H., Otaki T., Outa H., Saha P.K., Saitoh T, Sato Y., Sekimoto M., Takahashi T., Tamura H., Tanida K., Toyoda A., Ukai M., Yamauchi H.:
" A recent experiment with hyperball ",
Acta. Phys. Polon. **B35,** 1019-1023 (2004)

2003

315. Beer G. A. ,Bragadireanu A. M. ,Cargnelli M. ,Curceanu C. ,Egger J. -. ,Fuhrmann H. ,Giersch M. , Guaraldo C. ,Iliescu M. ,Ishiwatari T. ,Itahashi K. ,Iwasaki M. ,Kienle P. ,Lauss B. ,Lucherini V. , Ludhova L. ,Marton J. ,Mulhauser F. ,Ponta T. ,Schaller L. A. ,Sirghi D. L.,Sirghi F. ,and Zmeskal J.:
"Kaonic Hydrogen: Status of the DEAR Experiment",
Prog. Theor. Phys. Suppl. , No. **149**, pp.240--246 (2003).

316. Itahashi K. ,Iwasaki M. ,and Suzuki T. :
"Experimental Search for Kaonic Nuclear Bound States in the ^{4}He(stopped K^-,n) Reaction",
Prog. Theor. Phys. Suppl. , No. **149**, pp.233--239 (2003).

317. Suzuki K. ,Fujita M. ,Geissel H. ,Gilg H. ,Gillitzer A. ,Hayano R. ,Hirenzaki S. ,Itahashi K. ,Iwasaki M. , Kienle P. ,Matos M. ,Muenzenberg G. ,Otsubo T. ,Sato M. ,Shindo M. ,Suzuki T. ,Weick H. ,Winkler M. , Yamazaki T. ,and Yoneyama T. :
"Observattion of Pionic 1s States in Sn Nuclei and Its Implications on Chiral Symmetry Restoration",
Prog. Theor. Phys. Suppl. , No. **149**, pp.32--41 (2003). *

318. Suzuki K. ,Fujita M. ,Geissel H. ,Gilg H. ,Gillitzer A. ,Hayano R. ,Hirenzaki S. ,Itahashi K. ,Iwasaki M. , Kienle P. ,Matos M. ,Munzenberg G. ,Ohtsubo T. ,Sato M. ,Shindo M. ,Suzuki T. ,Weick H. , Winkler M. ,Yamazaki T. ,Sato M. ,and Yoneyama T. :
"Deeply bound poonic 1s in sn isotopes",
Nucl. Phys. **A 721**, 831c--834c (2003).   *

319. Takeda K. ,Awaga K. ,Ohira-Kawamura S. ,and Watanabe I. :
"μSR study of $[Mn_{12}O_{12}(O_2CC_6H_5)_{16}(H_2O)_4]_2C_6H_5CO_2H$",
Synth. Met. **133/134**, 609--610 (2003).   *

320. Jeong J. ,Briere T. M. ,Ohira-Kawamura S. ,Sahoo N. ,Nishiyama K. ,Nagamine K. ,and Das P. :
"Study of muon magnetic hyperfine and nuclear quadrupole interactions and easy axis in the organic ferromagnet p-Cl-Ph-CH=N-TEMPO",
Physica **B 334**, 335--342 (2003).

321. Miyake Y. ,Nishiyama K. ,Makimura S. ,Kawamura N. ,Simomura K. ,Kadono R. ,Higemoto W. , Fukuchi K. ,Beveridge J. L. ,Ishida K. ,Matsuzaki T. ,Watanabe I. ,Matsuda Y. ,Sakamoto S. ,Nakamura S. and Nagamine K. :
"The muon science facility at the JAERI/KEK joint project",
Physica **B 326**, 255--259 (2003).

322. Ishida K. ,Nagamine K. ,Matsuzaki T. ,and Kawamura N. :
"Highlights of muon catalyzed fusion experiments at RIKEN-RAL",
Proceedings of International Workshop on Exotic Atoms - Future Perspectives (EXA 2002) , Vienna , Austria , 2002-- 11 , edited by Kienle P. and others . , Austrian Academy of Sciences Press, Vienna, pp.175--184 (2003).

323. Strasser P. ,Nagamine K. ,Matsuzaki T. ,Ishida K. ,Matsuda Y. ,Itahashi K. ,and Iwasaki M. :
"Generation and investigation of radioactive muonic atoms in solid hydrogen films",
Nucl. Phys. **A 722**, 523c--527c (2003).

324. Strasser P. ,Nagamine K. ,Matsuzaki T. ,Ishida K. ,Matsuda Y. ,Itahashi K. ,and Iwasaki M. :
"Muon spectroscopy with unstable nuclei",
J. Phys. **G 29**, 2047--2049 (2003).

325. Ishida K. ,Nagamine K. ,Matsuzaki T. ,and Kawamura N. :
"Muon catalyzed fusion",
J. Phys. **G 29**, 2043--2045 (2003).

326. Bakule P. ,Matsuda Y. ,Miyake Y. ,Strasser P. ,Shimomura K. ,Makimura S. ,and Nagamine K. :
"Slow muon experiment by laser resonant ionization method at RIKEN-RAL muon facility",
Spectrochim. Acta **B 58**, 1019--1030 (2003).   *

327. Nakano T. ,Kiniwa D. ,Pratt F. L. ,Watanabe I. ,Ikemoto Y. ,and Nozue Y. :
"μSR study on ferromagnetism of potassium clusters in aluminosilicate zeolite LTA",
Physica **B 326**, 550--555 (2003).   *

328. Pratt F. L. ,Marshall I. M. ,Blundell S. J. ,Drew A. ,Lee S. L. ,Ogrin F. Y. ,Toyota N. ,and Watanabe I. :
"Angle-dependent vortex structure in a high anisotropy superconductor",
Physica **B 326**, 374--377 (2003). *

329. Goko T. ,Iigaya S. ,Ishiguro T. ,Arai J. ,Nishiyama K. ,Watanabe I. ,and Nagamine K. :
"μSR study of magnetic order in $La_{2-x}M_xCu_{1-y}Zn_yO_4$ (M=Sr, Ba)",
Physica **B 326,** 333--337 (2003). *

330. Watanabe I. ,Adachi T. ,Yairi S. ,Koike Y. ,and Nagamine K. :
"Dynamics of the stripes in $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$ around x=0.115 studied by μSR",
Physica **B 326**, 305--311 (2003). *

331. Yamanaka N. and Kino Y. :
"*Time-dependent coupled-channel calculation for elastic scattering of positrons by hydrogen atoms and helium ions"*,
Phys. Rev. **A 68**, 052715-1--052715-6 (2003). *

332. Yamanaka N. ,Kino Y. ,Takano Y. ,Kudo H. ,and Ichimura A. :
"Enhancement of direct positron annihilation due to temporal capture by an atom",
Phys. Rev. **A 67**, 052712-1--052712-4 (2003). *

333. Tomono D. ,Nakamura S. ,Matsuda Y. ,Iwasaki M. ,Mason G. ,Ishida K. ,Matsuzaki T. ,Watanabe I. , Sakamoto S. ,and Nagamine K. :
"Precise muon lifetime measurement at the RIKEN-RAL muon facility and prospects at a high intence muon source",
Nucl. Instrum. Methods Phys. Res. **A 503**, 283--286 (2003). *

334. Matsuda Y. ,Bakule P. ,Miyake Y. ,Shimomura K. ,Makimura S. ,Strasser P. ,Matsuzaki T. ,Ishida K. , and Nagamine K. :
"Generation of slow muon beam by laser resonant ionization of muonium atoms",
J. Phys. **G 29**, 2039--2041 (2003). *

335. Tomono D. ,Nakamura S. ,Matsuda Y. ,Iwasaki M. ,Mason G. ,Ishida K. ,Matsuzaki T. ,Watanabe I. , Sakamoto S. ,and Nagamine K. : *"Precise measurement of the positive muon lifetime at the RIKEN-RAL muon facility"*,
J. Phys. **G 29,** 2013--2015 (2003). *

336. Adachi T. ,Watanabe I. ,Yairi S. ,Takahashi K. ,Koike Y. ,and Nagamine K. :
"Effects of non-magnetic impurities on Cu-Spin dynamics and superconductivity in $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$ around x=0.115",
J. Low Temp. Phys. **131**, 843--847 (2003). *

337. Koike Y. ,Mikuni H. ,Watanabe I. ,Adachi T. ,Yairi S. ,and Nagamine K. :
"1/8 anomaly in the excess-oxygen-doped $La_{2-x}A_xCuO_4$+ (A=Nd, Bi, Pr)",
J. Low Temp. Phys. **131**, 837--841 (2003). *

338. Arai J. ,Ishiguro T. ,Goko T. ,Iigaya S. ,Nishiyama K. ,Watanabe I. ,and Nagamine K. :
"μSR study of magnetic order in LTO and LTT phase of $La_{2-x}M_xCu_{1-y}Zn_yO_4$ (M=Sr, Ba)",
J. Low Temp. Phys. **131**, 375--379 (2003). *

339. Watanabe I. ,Adachi T. ,Yairi S. ,Mikuni H. ,Koike Y. ,and Nagamine K. :
"μSR study on slowing-down behavior of the Cu-spin fluctuations at high temperatures in $La_{2-x}Sr_xCuO_4$",
J. Low Temp. Phys. **131**, 331--335 (2003). *

340. Miyadera H. ,Nagamine K. ,Simomura K. ,Nishiyama K. ,Tanaka H. ,Fukuchi K. ,Makimura S. ,and Ishida K. :
"Dai Omega, a large solid angle axial focusing superconducting surface muon channel",
Physica **B 326**, 265--269 (2003). *

341. Toyoda A. ,Ishida K. ,Simomura K. ,Nakamura S. ,Matsuda Y. ,Higemoto W. ,Matsuzaki T. ,and Nagamine K. :
"New insights in muon-catalyzed dd fusion by using ortho-para controlled solid deuterium",
Phys. Rev. Lett. **90**, 243401-1--243401-4 (2003). *

342. Kawamura N. ,Nagamine K. ,Matsuzaki T. ,Ishida K. ,Nakamura S. ,Matsuda Y. ,Tanase M. ,Kato M. ,
Sugai H. ,Kudo K. ,Takeda N. ,and Eaton G. H. :
"Discovery of temperature-dependent phenomena of muon-catalyzed fusion in solid deuterium and tritium mixtures",
Phys. Rev. Lett. **90**, 043401-1--043401-4 (2003). *

343. Mikuni H. ,Adachi T. ,Yairi S. ,Kato M. ,Koike Y. ,Watanabe I. ,and Nagamine K. :
"1/8 anomaly in the excess-oxygen-doped $La_{1.8}Nd_{0.2}Cu_{1-y}Zn_yO_{4+\delta}$",
Phys. Rev. **B 68**, 024524-1--024524-8 (2003). *

344. Vemuru K. ,Nagamine K. ,Nishiyama K. ,Ishikawa M. ,Yamaguchi M. ,Watanabe I. ,Ishikawa T. ,and Das T. P. :
"Magnetic ordering and spin dynamics in the quasi-one-dimensional spin-1/2 chains of $CuNb_2O_6$ observed by muon spin rotation and relaxation",
Phys. Rev. **B 68**, 014401-1--014401-8 (2003). *

345. Fujita M. ,Kubo T. ,Kuroshima S. ,Uefuji T. ,Kawashima K. ,Yamada K. ,Watanabe I. ,and Nagamine K. :
"Magnetic and superconducting phase diagram of electron-doped $Pr_{1-x}LaCe_xCuO_4$",
Phys. Rev. **B 67**, 014514-1--014514-5 (2003). *

346. Ohira S. ,Awaga K. ,Fujita W. ,Watanabe I. ,and Nagamine K. :
"μSR study on a metal complex having a ferromagnetic linear chain p-NPNN・ $Cu(hfac)_2$",
Physica **B 326**, 568--571 (2003). *

347. Matsuda Y. ,Bakule P. ,Strasser P. ,Matsuzaki T. ,Ishida K. ,Watanabe I. ,Miyake Y. ,Simomura K. ,
Makimura S. ,and Nagamine K. : *"The first observation of slow muon beam at the RIKEN-RAL muon facility"*,
Physica **B 326**, 217--221 (2003). *

348. Matsuzaki T. ,Nagamine K. ,Kawamura N. ,Ishida K. ,Matsuda Y. ,Nakamura S. ,Kato M. ,Sugai H. ,
Tanase M. ,Kudo K. ,Takeda N. ,and Eaton G. H. :
"Evidence for strong n-α correlations in the t+t reaction proved by the neutron energy distribution of muon catalyzed t-t fusion",
Phys. Lett. **B 557**, 176--183 (2003). *

349. Kadono R. ,Macrae R. M. ,and Nagamine K. :
"Charge dynamics of muonium centers in Si revealed by photoinduced muon spin relaxation",
Phys. Rev. **B 68**, 245204-1--245204-17 (2003). *

350. Kim J.H., Bhang H., Kim M.J., Kim Y.D., Park H., Ajimura S., Kishimoto T., Minami S., Mori T., Sakaguchi A., Shimizu Y., Sumihama M., Endo T., Hashimoto O., Miyoshi T., Nishida J., Saito T., Sato Y., Satoh S., Takahashi T., Tamura H., Fukuda T., Nagae T., Noumi H., Outa H., Sekimoto M., Hotchi H., Tanida K., Sawafra R., Tang L.I.:
"Neutron energy spectra from the nonmesonic weak decay of C-12-lambda and Y-89-lambda hypernuclei. ",
Phys. Rev. **C68**, 065201 (2003)

351. Sakaguchi A., Ajimura S., Hayakawa H., Kishimoto T., Kohri H., Matsuoka K., Minami S., Miyake Y.S., Morikubo K., Saji E., Shimizu Y., Sumihama M., Chrien R.E., May M., Pile P., Rusek A., Sutter R., Eugenio P.M., Franklin G., Khaustov P., Paschke K., Quinn B., Tamagawa R.A., Tanida K., Sawafta R., Tamura H., Akikawa H.:
" Structure of (Lambda)C-13 hypernucleus studied by the (K-,pi- gamma) reaction. ",
Nucl. Phys. **A721**, 979-982 (2003)

2002

352. Strasser P. ,Matsuzaki T. ,and Nagamine K. :
"Implantation of RI beams in solid hydrogen films",
Condensed Matter Studies with Radioactive Ion Beams ,Wako ,2002-- 2 , edited by Miyake Y. and Nagamine K. , RIKEN, Wako, pp.39--45 (2002).

353. Strasser P. :
"Upgrading of RIKEN-RAL muon facility: Port 4 construction",
Proceedings of International Workshop on Future of Muon Science , Tsukuba and Wako , 2002-- 3 , KEK, Tsukuba, pp.77--78 (2002).

354. Smith D. A. ,Bowman J. D. ,Crawford B. E. ,Grossmann C. A. ,Haseyama T. ,Masaike A. ,Matsuda Y. , Mitchell G. E. ,Penttila S. I. ,Roberson N. R. ,Seestrom S. J. ,Sharapov E. I. ,Stephenson S. L. ,and Yuan V. W. :
"Parity violation in neutron resonances of palladium",
Phys. Rev. **C 65**, 035503-1--035503-9 (2002). *

355. Goka H. ,Kubo T. ,Uefuji T. ,Fujita M. ,Yamada K. ,Matsuda M. ,Watanabe I. ,and Nagamine K. :
"Structural effect on the stability of magnetic order in $La_{1.875}Ba_{0.125-x}Sr_xCuO_4$",
Physica **C 378/381**, 390--394 (2002). *

356. Kubo T. ,Uefuji T. ,Fujita M. ,Yamada K. ,Watanabe I. ,and Nagamine K. :
"Magnetic phase diagrams of electron-doped high-T_c cuprates $Pr_{1-x}LaCe_xCuO_{4-\delta}$ and $Nd_{2-x}Ce_xCuO_{4-\delta}$ studied by μSR measurements",
Physica **C 378/381**, 354--359 (2002). *

357. Smith D. A. ,Bowman J. D. ,Crawford B. E. ,Grossmann C. A. ,Haseyama T. ,Masaike A. ,Matsuda Y. , Mitchell G. E. ,Penttila S. I. ,Roberson N. R. ,Seestrom S. J. ,Sharapov E. I. ,Stephenson S. L. ,Sukhovoj A. M. and Yuan V. W. :
"Neutron resonance spectroscopy of ^{104}Pd, ^{105}Pd, and ^{110}Pd",
Phys. Rev. **C 65**, 024607-1--024607-16 (2002). *

358. Watanabe I. ,Adachi T. ,Takahashi K. ,Yairi S. ,Koike Y. ,and Nagamine K. :
"Muon-spin-relaxation study of the effect of nonmagnetic impurities on the Cu-spin fluctuations in $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$ *around x=0.115"*,
Phys. Rev. **B 65**, 180516-1--180516-4 (2002). *

359. Beer G., Bragadireanu A. M., Breunlich W., Cargnelli M., Curceanu (Petrascu) C., Egger J. -P., Fuhrmann H., Guaraldo C., Giersch M., Iliescu M., Ishiwatari T., Itahashi K., Lauss B., Lucherini V., Ludhova L., Marton J., Mulhauser F., Ponta T., Sanderson A. C., Schaller L. A., Sirghi D. L., Sirghi F. and Zmeskal J.
"A new method to obtain a precise value of the mass of the charged kaon"
Phys.Lett.**B535**:52-58,(2002).

360. Haseyama T. ,Asahi K. ,Bowman J. D. ,Delheij P. P. ,Funahashi H. ,Ishimoto S. ,Jones G. ,Masaike A. , Masuda Y. ,Matsuda Y. ,Morimoto K. ,Mutou S. ,Penttila S. I. ,Pomeroy V. R. ,Sakai K. ,Sharapov E. I. , Smith D. A. ,and Yuan V. W. :
"Measurement of parity-nonconserving rotation of neutron spin in the 0.734-eV p-wave resonance of ^{139}La*"*,
Phys. Lett. **B 534**, 39--44 (2002). *

361. Rich D. R.,Bowman J. D.,Crawford B. E.,Delheij P. P.,Espy M. A.,Haseyama T.,Jones G. ,Keith C. D. , Knudson J.,Leuschner M. B. ,Masaike A. ,Masuda Y.,Matsuda Y. ,Penttila S. I. ,Pomeroy V. R. ,Smith D. A. , Snow W. M. ,Szymanski J. J. ,Stephenson S. L. ,Thompson A. K.,and Yuan V. W.:
"A measurement of the absolute neutron beam polarization produced by an optically pumped ^3He *neutron spin filter"*,
Nucl. Instrum. Methods Phys. Res. **A 481,** 431--453 (2002). *

362. Watanabe I. ,Adachi T. ,Takahashi K. ,Yairi S. ,Koike Y. ,and Nagamine K. :
"μSR study of the Cu-spin dynamics in $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$*"*,
J. Phys. Chem. Solids **63**, 1093--1096 (2002). *

363. Miyake Y. ,Simomura K. ,Makimura S. ,Matsuda Y. ,Bakule P. ,and Nagamine K. :
"Ultra-sensitive detection of hydrogen isotopes by Lyman-α RIS",
J. Nucl. Sci. Technol. **39**, 287--291 (2002). *

364. Ulrich C. ,Khaliullin G. ,Okamoto S. ,Reehuis M. ,Ivanov A. ,He H. ,Taguchi Y. ,Tokura Y. ,and Keimer B. :
"Magnetic order and dynamics in an orbitally degenerate ferromagnetic insulator",
Phys. Rev. Lett. **89**, 167202-1--167202-4 (2002). *

365. Khaliullin G. and Okamoto S. :
"Quantum behavior of orbitals in ferromagnetic titanates: Novel orderings and excitations",
Phys. Rev. Lett. **89,** 167201-1--167201-4 (2002). *

366. Jonsson P. E. ,Yoshino H. ,Nordblad P. ,Aruga-Katori H. ,and Ito A. :
"Domain growth by isothermal aging in 3D Ising and Heisenberg spin glasses",
Phys. Rev. Lett. **88**, 257204-1--257204-4 (2002). *

367. Krishnamurthy V. V. ,Nagamine K. ,Watanabe I. ,Nishiyama K. ,Ohira S. ,Ishikawa M. ,Eom D. H. , Ishikawa T. ,and Briere T. M. :
"Non-Fermi liquid spin dynamics in $CeCoGe_{3-x}Si_x$ *(x= 1.2 and x= 1.5)"*,
Phys. Rev. Lett. **88**, 046402-1--046402-4 (2002). *

368. Geissel H., Gilg H., Gillitzer A., Hayano R.S., Hirenzaki S., Itahashi K., Iwasaki M., Kienle P., Muench, M., Muenzenberg, G. Schott W., Suzuki K., Tomono D., Weick H., Yamazaki T., Yoneyama T.,
"Deeply bound 1s and 2p pionic states in Pb-205 and determination of the S wave part of the pion nucleus interaction.",
Phys. Rev. Lett. **88**, 122301 (2002).

369. Yagi E. ,Koike S. ,Matsumoto T. ,Urai T. ,Tajima N. ,and Ogiwara K. :
"Site occupancy change of hydrogen in Nb-Mo alloys with Mo concentration",
Phys. Rev. **B 66**, 024206-1--024206-7 (2002). *

370. Okamoto S. ,Ishihara S. ,and Maekawa S. :
"Theory of Raman scattering from orbital excitations in manganese oxides",
Phys. Rev. **B 66**, 014435-1--014435-9 (2002). *

371. Matsuzaki T. ,Nagamine K. ,Ishida K. ,Kawamura N. ,Nakamura S. ,Matsuda Y. ,Tanase M. ,Kato M. , Kurosawa K. ,Sugai H. ,Kudo K. ,Takeda N. ,and Eaton G. H. :
"First observation of radiative photons associated with the μ^- transfer process from $(t\mu^-)$ to ^3He through an intermediate $(t^3He\mu^-)$ mesomolecule",
Phys. Lett. **B 527**, 43--49 (2002). *

372. Miyatake H. ,Jeong S. C. ,Ishiyama H. ,Ishida Y. ,Kawakami H. ,Yoshikawa N. ,Katayama I. ,Tanaka M. , Tojyo E. ,Oyaizu M. ,Arai S. ,Tomisawa M. ,Niki K. ,Arakaki Y. ,Okada M. ,Takeda Y. ,Wada M. , Strasser P. ,Kubono S. ,and Nomura T. :
"Present status of the radioactive nuclear beam facility at KEK-Tanashi and the E-arena in the KEK-JAERI joint project",
Nucl. Phys. **A 701**, 62c--66c (2002). *

373. Ishiyama H. ,Miyatake H. ,Yoshikawa N. ,Jeong S. C. ,Wada M. ,Ishida Y. ,Tanaka M. ,Takaku S. , Fuchi Y. ,Kawashima H. ,Katayama I. ,Nomura T. ,Teranishi T. ,Michimasa S. ,Imai N. ,Yanagisawa Y. , Kubono S. ,Strasser P. ,and Kato S. :
"A recoil mass separator for nuclear astrophysics experiments",
Nucl. Phys. **A 701**, 58c--61c (2002). *

374. Matsuzaki T. ,Nagamine K. ,Tanase M. ,Kato M. ,Kurosawa K. ,Sugai H. ,Ishida K. ,Nakamura S. ,Watanabe I. , and Eaton G. H. :
"A tritium gas-handling system for muon catalyzed fusion research at the RIKEN-RAL Muon Facility",
Nucl. Instrum. Methods Phys. Res. **A 480**, 814--827 (2002). *

375. Matsuzaki T. ,Nagamine K. ,Ishida K. ,Kato M. ,Sugai H. ,Tanase M. ,and Eaton G. H. :
"An in-situ tritium-deuterium gas-purification system for muon catalyzed fusion experiments at the RIKEN-RAL Muon Facility",
Fusion Sci. Technol. **41**, 993--997 (2002). *

376. Kato M. ,Ito T. ,Sugai H. ,Kawamura Y. ,Hayashi T. ,Nishi M. ,Tanase M. ,Matsuzaki T. ,Ishida K. , and Nagamine K. :
"Developmemt of electrochemical hydrogen pump under vacuum condition for a compact tritium gas recycling system",
Fusion Sci. Technol. **41**, 859--863 (2002). *

377. Ishida K. :
"μCF experiments at RIKEN-RAL (1): introduction and muon loss processes",
International Workshop on Future of Muon Science on Future of Muon Science , Tsukuba and Wako , 2002-- 3 , edited by Miyake Y. and Nagamine K. , KEK, Tsukuba, pp.81--82 (2002).

3.5.2. Publication in Japanese

1. 山崎敏光、赤石義紀
“新しい高密度核凝集力—K中間子の共有結合がつくる超強核力の世界”,
日本物理学会誌 63（2008）707~710.

2. 川股 隆行 , 小池 洋二 ：
″低次元量子スピン系物質におけるスピンによる熱伝導″,
応用物理 77, No. 5, pp.525--529 (2008).

3. 松崎 禎市郎 , 永嶺 謙忠 , 石田 勝彦 , 河村 成肇 , 今尾 浩士 , 松田 恭幸 , 岩崎 雅彦 , 中村 哲 , 加藤 岑生 , 須貝 宏行 , 棚瀬 正和 , 工藤 勝久 , 瓜谷 章 , 原野 英樹 , Eaton G. H. ：
″Particle correlations in t+t reactions studied by muon catalyzed t-t fusion″,
原子核研究 49, No. 6, pp.191--196 (2005). ＊

4. 小池 貴久 ：
"Cascade Calculation of Exotic Atoms with Many Electrons: electron population during the cascade of kaonic nitrogen atoms",
原子核研究 49, No 6, 159--164 (2005).

5. 鈴木 謙、板橋健太、比連崎悟、早野龍五,
"パイ中間子原子で探るハドロン質量の起源--カイラル凝縮の変化の定量的測定",
日本物理学会誌第 60 巻 1 号 (2005)

6. 松田 恭幸 ,三宅 康博 ：
"超低速ミュオンビームによって開かれる新しいμSR の世界",
固体物理 39, 599--605 (2004).

3.5.3. Oral Presentation (International Conference)

2009

1. Yamada Y . ,Ito A . ,Kouno K . ,Yoshida H . ,and Kobayashi Y . :
"Laser deposition of iron in oxygen atmosphere",
4th Asia-Pacific Symposium on Radiochemistry '09 (APSORC'99) , (University of California, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory), Napa Valley , USA , Nov.--Dec. (2009).

2. Nagatomo T . ,Kobayashi Y . ,Mihara M . ,Kubo K . ,Yamada Y . ,Sato W . ,Miyazaki J . ,Sato S . , and Kitagawa A . :
"In-beam Mossbauer Spectroscopy of ^{57}Mn implanted into magnesium oxide",
4th Asia-Pacific Symposium on Radiochemistry '09 (APSORC'99) , (University of California, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory), Napa Valley , USA , Nov.--Dec. (2009).

3. Risdiana . . ,Fitrilawati . . ,Siregar R . ,Hidayat R . ,Nugroho A. A . ,Tjia M . ,Ishii Y . ,and Watanabe I . :
"Spin dynamics in regio-regular poly(3-octylthiophene-2, 5-diyl) studied by muon spin relaxation",
Advanced Science Research Symposium 2009 (ASR 2009) , Tokai , Nov.--Nov. (2009).

4. Tomono D . ,Kawamata T . ,Hirayama Y . ,Iwasaki M . ,Watanabe I . ,Ishida K . ,and Matsuzaki T . :
"Progress in development of new μSR spectrometer at RIKEN-RAL",
Advanced Science Research Symposium 2009 (ASR2009) -Positron, Muon and other exotic particle beams for materials and atomic/molecular sciences- , (JAEA), Tokai , Nov. (2009).

5. Ohishi K . ,Suzuki T . ,Heffner R. H . ,Ito T. U . ,Higemoto W . ,Bauer E. D . ,and Thompson J. D . :
"Magnetism and muon Knight shift measurements in heavy fermion compound Ce2Rh(In,Sn) 8",
Advanced Science Research Symposium 2009 (ASR2009) -Positron, Muon and other exotic particle beams for materials and atomic/molecular sciences- , (Japan Atomic Energy Agency), Tokai , Nov. (2009).

6. Sato M . ,Beer G. A . ,Bhang H . ,Buehler P . ,Cargnelli M . ,Chiba J . ,Choi S . ,Curceanu C. O . , Fukuda Y . ,Guaraldo C . ,Hanaki T . ,Hayano R . ,Hirtl A . ,Iio M . ,Iliescu M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Marton J . ,Matsuda Y . , Onishi H . ,Okada S . ,Outa H . ,Pietreanu D . ,Sirghi D . ,Sirghi F . ,Suzuki T . ,Tatsuno H . , Tomono D . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"Precision spectroscopy of Kaonic Helium-3 X ray at J-PARC",
ECT* conference, Hadronic atoms and Kaonic nuclei , Trento, Italy, October 12–16, (2009).

7. Outa H. for KEK-PS E549 and J-PARC E15/E17 collaborations:
"Preparation status of E15 experiment at J-PARC K1.8BR beam line",
ECT* conference, Hadronic atoms and Kaonic nuclei , Trento, Italy, October 12–16, (2009)

8. Akaishi Y.
"Single-pole nature of Λ(1405) and structure of $K^{-}pp$ quasi-bound state",
ECT* conference, Hadronic atoms and Kaonic nuclei , Trento, Italy, October 12–16, (2009)

9. Sakuma F . :
"Development of the Cylindrical Detector System for an experimental search for kaonic nuclei at J-PARC",
The Third Joint JPS/DNP Meeting (Hawaii 2009) , Hilton Waikoloa Village on Hawaii's Big ,USA , Oct. (2009).

10. Akaishi Y. :
"Single-pole nature of Λ(1405) and structure of $K^{-}pp$",
The 10th International Conference on Hypernuclear and Strange Particle Physics Tokai, Ibaraki, Japan, September 14–18, (2009)

11. Outa H. for KEK-PS E462/E508/E549 collaborations:
"Weak decay studies at KEK",
10th International Conference on Hypernuclear and Strange Particle Physics " Hyp X ",
RICOTTI in Tokai, Ibaraki, Japan , Sep.14th-18th (2009)

12. Risdiana . . ,Fitrilawati . . ,Siregar R . ,Hidayat R . ,Nugroho A. A . ,Tjia M . ,and Watanabe I . :
"Dimensional crossover in regio-random polythiophene studied by muon spin relaxation",
The 8th International Symposium on Crystalline Organic Metals, Superconductors and Ferromagnets , Hokkaido , Sept.--Sept. (2009).

13. Ohishi K . ,Ito T. U . ,Higemoto W . ,Uehara A . ,Kozawa K . ,Yamazaki T . ,Kimishima Y . ,and Uehara M . :
"Quasiparticle Excitations in Newly Discovered Antiperovskite Superconductor $ZnNNi_3$",
9th International Conference on Materials and Mechanisms of Superconductivity (M2S-IX) , Tokyo , Sept. (2009).

14. Koike T . and Harada T . :
"^{3}He(in-flight K^{-},n) reaction spectrum and moving pole of a deeply-bound $K^{-}pp$ state in complex energy plane",
10th International Conference on Hypernuclear and Strange Particle Physics(Hyp X), (Kyoto university, the Global COE Program),Tokai , Sept. (2009).

15. Iio M . ,Bhang H . ,Cargnelli M . ,Choi S . ,Curceanu C. O . ,Doce O. V . ,Enomoto S . ,Fujioka H . ,
Fijiwara Y . ,Guaraldo C . ,Hashimoto T . ,Hayano R . ,Hiraiwa T . ,Ishimoto S . ,Ishiwatari T . ,
Itahashi K . ,Iwasaki M . ,Kou H . ,Kienle P . ,Marton J . ,Matsuda Y . ,Noumi H . ,Onishi H . ,Okada S . ,
Outa H . ,Sakuma F . ,Sato M . ,Sekimoto M . ,Shi H . ,Sirghi D . ,Sirghi F . ,Suzuki T . ,Tanida K . ,
Tatsuno H . ,Tokuda M . ,Tomono D . ,Toyoda A . ,Tsukada K . ,Vidal A. R . ,Widmann E . ,
Wunschek B . ,Yamazaki T . ,and Zmeskal J . :
"Precision spectroscopy of kaonic helium-3 atoms x-rays at J-PARC",
19th International IUPAP Conference on Few-Body Problems in Physics , Bonn , Germany , Aug.--Sept. (2009).

16. Suzuki T . ,Watanabe I . ,Yamada F . ,Ishii Y . ,Ohishi K . ,Risdiana . ,Goto T . ,and Tanaka H . :
"Pressure effect on magnetic ground states in $Tl(Cu_{1-x}Mg_x)Cl_3$ probed by muon-spin-rotation",
International Conference on Magnetism (ICM 2009) , Karlsruhe , Germany , July--July (2009).

17. Goto T . ,Suzuki T . ,Nakajima S . ,Kanada K . ,Saito T . ,Watanabe I . ,H L . ,and Alex A . :
"μSRstudy on the ground state of bond-disordered spin gap system $(CH_3)_2CHNH_3Cu(Cl_{1-x}Br_x)_3$ (x = 0.95, 0.88)",
International Conference on Magnetism (ICM 2009) , Karlsruhe , Germany , July--July (2009).

18. Nakajima S . ,Goto T . ,Suzuki T . ,Watanabe I . ,and Manaka H . :
"μSR and NMR Study on Quantum Critical Point in Quantum Spin Ladder $(CH_3)_2CHNH_3Cu(Cl_xBr_{1-x})_3$",
International Conference on Magnetism (ICM 2009) , Karlsruhe , Germany , July--July (2009).

19. Risdiana . . ,Fitrilawati . . ,Hidayat R . ,Siregar R . ,Tjia M . ,and Watanabe I . :
"*μSR study of electron radical dynamics in regio-regular polythiophene*",
International Conference on Magnetism , Karlsruhe , Germany , July--July (2009).

20. Kubo K . ,Kobayashi Y . ,Yamada Y . ,Sato W . ,Shinohara A . ,Shoji H . ,Segawa M . ,and Matsue H . :
"Neutron In-beam Mossbauer Spectroscopy of Iron Disulfide at 200 K",
International Conference on the Application of Mossbauer Effect (ICAME09) , (Technical University of Wien), Vienna , Austria , July (2009).

21. Yamada Y . ,Yoshida H . ,Kouno K . ,and Kobayashi Y . :
"Iron Carbode Films Produced by Laser Deposition",
International Conference on the Application of Mossbauer Effect (ICAME09) , (Technical University of Vienna), Vienna , Austria , July (2009).

22. Tsutsui S . ,Kobayashi Y . ,Higashitaniguchi S . ,Yoda Y . ,Seto M . ,and Takabatake T . :
"Eu Charge and Atomic Dynamics in $Eu_3Pd_{20}Ge_6$ Investigated by ^{151}Eu Mossbauer Effect",
International Conference on the Application of Mossbauer Effect (ICAME09) , (Technical University of Wien), Vienna , Austria , July (2009).

23. Kobayashi Y . :
"^{99}Ru and ^{61}Ni Mossbauer spectrosopcy in RIKEN",
International Conference on the Application of Mossbauer Effect (ICAME09) , (Technical University of Vienna), Vienna , Austria , July (2009).

24. Kawamata T . ,Kaneko N . ,Uesaka M . ,Sato M . ,and Koike Y . :
"Enhancement of Thermal Conductivity due to Spinons in the One-Dimensional Spin System $SrCuO_2$",
International Conference on Magnetism (ICM 2009) , (Universitat Karlsruhe), Karlsruhe , Germany , July (2009).

25. Akaishi Y. :
“Critical review on the KbarN interaction derived from a chiral SU(3) model”,
Mini-workshop on KbarN and KbarNN, RIKEN, Wako, Japan, May (2009)

26. Akaishi Y. :
“On the “chiral SU(3) dynamics” – a critical view –“, On the “chiral SU(3) dynamics” – a critical view -,
Univ. of Tokyo, Feb.(2009)

2008

27. Iio M . ,Ajimura S . ,Beer G. A . ,Bhang H . ,Buehler P . ,Busso L . ,Cargnelli M . ,Chiba J . ,Choi S . , Curceanu C. O . ,Enomoto S . ,Faso D . ,Fujioka H . ,Fijiwara Y . ,Fukuda T . ,Fukuda Y . ,Guaraldo C . , Hanaki T . ,Hayano R . ,Hiraiwa T . ,Hirtl A . ,Iliescu M . ,Ishikawa T . ,Ishimoto S . ,Ishiwatari T . , Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Marton J . ,Matsuda Y . ,Mizoi Y . ,Morra O . ,Nagae T . , Noumi H . ,Onishi H . ,Okada S . ,Outa H . ,Pietreanu D . ,Sada Y . ,Sakaguchi A . ,Sakuma F . ,Sato M . , Sekimoto M . ,Sirghi D . ,Sirghi F . ,Suzuki T . ,Tatsuno H . ,Tokuda M . ,Tomono D . ,Toyoda A . , Tsukada K . ,Widmann E . ,Wunschek B . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"Experimental research of kaonic nuclei and kaonic atoms at J-PARC",
International Conference on Particles And Nuclei (PANIC08) , (International Union of Pure and Applied Physics), Eilat , Israel , Nov.--Nov. (2008).

28. Kousaka Y . ,Ohsumi H . ,Komesu T . ,Arima T . ,Sakai S . ,Akita M . ,Inoue K . ,Yokobori T . , Nakao Y . ,Kaya E . ,and Akimitsu J . :
"Crystallographic Chirality in $CsCuCl_3$ Investigated by Rosonant Circularly-polarized X-ray Scattering",
2nd International Symposium on Anomalous Quantum Materials (ISAQM2008) and the 7th Asia-Pacific Workshop , (Invention of Anomalous Quantum Materials), Tokyo , Nov. (2008).

29. Kawamata T . ,Uesaka M . ,Sugawara N . ,Kaneko N . ,Koyama K . ,Kudo K . ,Kobayashi N . , and Koike Y . :
"Single-Crystal Growth and Thermal Conductivity of the Alternating Chain System $Pb_2V_3O_9$ and Uniform Chain System $Sr_2V_3O_9$",
2nd International Symposium on Anomalous Quantum Materials (ISAQM2008) and the 7th Asia-Pacific Workshop , (Grant-in-Aid for Scientific Research on Priority Areas), Tokyo , Nov. (2008)

30. Kobayashi Y . :
"Materials Research using Mossbauer Spectroscopy with Exotic Nuclei",
6th Japan-Italy Symposium on Heavy Ion Physics , Tokai , Oct. (2008).

31. Akaishi Y. :
"Structure of K^-pp system and super-strong nuclear force by migrating K^{bar} meson",
KGU Yokohama Autumn School of Nuclear Physics, KGU Kannai Media Center, Yokohama, October 9̃10(2008)

32. Matsumoto T . ,Egami T . ,Ogata K . ,Iseri Y . ,Yahiro M . ,and Kamimura M . :
"Coupled-channel analyses of ^6He breakup reactions",
KGU Yokohama Autumn School of Nuclear Physics , Yokohama , Oct. (2008)

33. Sakuma F . :
"The search for deeply-bound kaonic nuclear states at J-PARC",
19th International Baldin Seminar on High Energy Physics Problems: Relativistic Nuclear Physics and Quantum Chromodynamics , (JINR), Dubna , Russia , Sept.--Oct. (2008)

34. K. Itahashi,
"Pionic atom factory project in RIBF"
19th International Baldin Seminar on High Energy Physics Problems: Relativistic Nuclear Physics and Quantum Chromodynamics , (JINR), Dubna , Russia , Sept.--Oct. (2008)

35. Koike T . and Harada T . :
"The $K^{bar}N \rightarrow \pi\Sigma$ decay threshold effect in ^3He(in-flight K-,n) reaction spectrum",
International Conference on Exotic Atoms and Related Topics (EXA 08) , (Stefan Meyer Institute for subatomic Physics, Austrian Academy of Science), Vienna , Austria , Sept. (2008)

36. Y.Akaishi :
"Structure of K^-pp system and super-strong nuclear force by migrating K^{bar} meson",
International Conference on Exotic Atoms and Related Topics (EXA 08) , (Stefan Meyer Institute for subatomic Physics, Austrian Academy of Science), Vienna , Austria , Sept. (2008)

37. K. Itahashi,
"Pionic atom factory project at RIBF",
International Conference on Exotic Atoms and Related Topics (EXA 08) , (Stefan Meyer Institute for subatomic Physics, Austrian Academy of Science), Vienna , Austria , Sept. (2008)

38. Koike T . and Harada T . :
"^{3}He(in-flight K-,n) reaction spectrum near the $K^{bar}N \rightarrow \pi\Sigma$ decay threshold and the deeply-bound K^-pp state",
4th Asia-Pacific Conference on Few-Body Problems in Physics (APFB08) , (University of Indonesia), Depok , Indonesia , Aug. (2008).

39. Akaishi Y. :
"Structure of K^-pp system and super-strong nuclear force by migrating K^{bar} meson",
4th Asia-Pacific Conference on Few-Body Problems in Physics (APFB08),(University of Indonesia),Depok, Indonesia , Aug. (2008).

40. Outa H:
"Weak interaction in hypernuclear decay",
The fourth Asia-Pacific Conference on Few-Body Proble,s in Physics Depok, Indonesia Aug.23th (2008).

41. Koike Y. ,Haidar S. M. ,Adachi T. ,Kawamata T . ,Sugawara N . ,Kaneko N . ,Uesaka M . ,Sato H . , Tanabe Y . ,Noji T . ,Kudo K . ,and Kobayashi N . :
"Thermal-conductivity study on the electronic state in the overdoped regime of $La_{2-x}Sr_xCuO_4$: Phase separation and anomaly at x ~0.21", 25th International Conference on Low Temperature Physics (LT25) , Amsterdam , Netherland , Aug. (2008).

42. Uesaka M . ,Kawamata T . ,Sugawara N . ,Kaneko N . ,Kudo K . ,Kobayashi N . ,and Koike Y . :
"Single-Crystal Growth and Thermal Conductivity of the Quasi One-Dimensional Spin System $Sr_2V_3O_9$",
25th International Conference on Low Temperature Physics (LT25) , Amsterdam , Netherland , Aug. (2008)

43. Kawamata T . ,Sugawara N . ,Uesaka M . ,Kaneko N . ,Kajiwara T . ,Yamane H . ,Koyama K . , Kudo K . ,Kobayashi N . ,and Koike Y . :
"$Pb_2V_3O_9$ and the bose-einstein condensed state of triplons studied by thermal conductivity and specific heat measurements",
25th International Conference on Low Temperature Physics (LT25) , Amsterdam , Netherland , Aug. (2008)

44. Oosawa A . ,Suzuki T . ,Watanabe I . ,Goto T . ,and Manaka H . :
"μSR-detected Softmode toward a Possible Phase Transition in disordered spin gap system $(CH_3)_2CHNH_3$-$Cu(Cl_xBr_{1-x})_3$",
11th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2008) , Tsukuba , July--July (2008).

45. Tanabe Y . ,Adachi T . ,Risdiana R . ,Kawamata T . ,Suzuki T . ,Watanabe I . ,and Koike Y . :
"Ni-substitution effects on Cu-spin correlation in $La_{2-x}Sr_xCu_{1-y}Ni_yO_4$ relating to hole trapping and stripe pinning",
11th International conference on muon spin rotation, relaxation and resonance , Tsukuba, Japan , July--July (2008).

46. Nugroho A. A . ,Risdiana R . ,Mufti N . ,Palstra T . ,Watanabe I . ,and Tjia M . :
"Changes of spin dynamics in multiferroic $Tb_{1-x}Ca_xMnO_3$",
11th International conference on muon spin rotation, relaxation and resonance , Tsukuba, Japan , July--July (2008).

47. Yokoyama K . ,Nagamine K . ,Simomura K . ,Tom H. W . ,Roland K. K . ,Bakule P . ,Matsuda Y . ,Pratt F. L . , and Torikai E . :
"Muons for spintronics: photo-induced conduction electron polarization in n-type GaAs observed by the muonium method",
11th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2008) , (International Society for MuSR Spectroscopy), Tsukuba , July (2008).

48. Tomono D . ,Hirayama Y . ,Ishida K . ,Iwasaki M . ,Kawamata T . ,Matsuzaki T . ,and Watanabe I . :
"Construction of new multi-channel μSR spectrometer at RIKEN-RAL",
11th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2008) , (KEK-MSL, Nishina Center, RIKEN, JAEA), tsukuba , July (2008).

49. Matsumoto T . ,Egami T . ,Ogata K . ,Iseri Y . ,Yahiro M . ,and Kamimura M . :
"Coupled-channel analyses of ^{6}He breakup reactions",
Hokudai-TORIJIN-JUSTIPEN-EFES Workshop JUSTIPEN-EFES-Hokudai-UNEDF Meeting , Sapporo , July (2008)

50. Ohishi K . ,Heffner R. H . ,Spehling J . ,MacDougall G. J . ,Ito T. U . ,Higemoto W . ,Amato A . , Andreica D . ,Nieuwenhuys G . ,Klauss H. H . ,Luke G. M . ,Thompson J. D . ,Bianchi A. D . ,and Fisk Z . :
"Magnetism and superconductivity in heavy fermion superconductor $CeCo(In_{1-x}Cd_x)_5$",
11th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2008) , Tsukuba , July (2008).

51. Ohishi K . ,Yamada I . ,Koda A . ,Saha S. R . ,Higemoto W . ,Kadono R . ,Kojima K. M . ,Azuma M . , and Takano M . :
"Field-induced magnetism in cuprate superconductor $Ca_{2-x}Na_xCuO_2Cl_2$",
11th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2008) , Tsukuba , July (2008).

52. Ishii Y . ,Watanabe I . ,Suzuki T . ,Kawamata T . ,and Kato R . :
"Effect of pressure on conductive anion-radical salt, $(DMe\text{-}DCNQI)_2Cu$",
11th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2008) , Tsukuba , July (2008)

53. Suzuki T . ,Yamada F . ,Watanabe I . ,Goto T . ,Osawa A . ,and Tanaoa H . :
"Bond-randomness effect on the quantum spin system $Tl_{1-x}K_xCuCl_3$ probed by muon-spin-relaxation method",
11th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2008) , (JAEA, KEK, RIKEN), Tsukuba , July (2008).

54. Matsumoto T . ,Ogata K . ,Egami T . ,Iseri Y . ,Yahiro M . ,and Kamimura M . :
"The method of CDCC for four-body breakup reactions",
International Nuclear Physics Conference (INPC2007) , (Science Council of Japan, RIKEN and others), Tokyo , June--June (2008).

55. Sato M . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J . ,Matsuda Y . ,Onishi H . , Okada S . ,Outa H . ,Suzuki S . ,Suzuki T . ,Tomono D . ,Widmann E . ,Yamazaki T . ,and Yim H . :
"Search for strange tribaryon states in the $^{4}He(stopped\ K^{-},p)$ reaction",
10th International Workshop on Meson Production, Properties and Interaction , Krakow , Poland , June (2008).

56. Kobayashi Y . :
"Materials Science at RARF in RIKEN",
International Workshop on Materials and Life Science using Nuclear Probes from Heavy-ion Accelerators , Wako , Apr. (2008).

57. Iio M . ,Beer G. A . ,Bhang H . ,Buehler P . ,Cargnelli M . ,Chiba J . ,Choi S . ,Curceanu C. O . , Fukuda Y . ,Guaraldo C . ,Hanaki T . ,Hayano R . ,Hirtl A . ,Iliescu M . ,Ishikawa T . ,Ishimoto S . , Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Marton J . ,Matsuda Y . ,Onishi H . ,Okada S . , Outa H . ,Pietreanu D . ,Sakuma F . ,Sato M . ,Sekimoto M . ,Sirghi D . ,Sirghi F . ,Suzuki T . ,Tatsuno H . , Tomono D . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"Precision spectroscopy of kaonic helium-3 x-rays at J-PARC",
4th International Workshop on Nuclear and Particle Physics at J-PARC (NP08) , (Science Council of Japan), toukai , Mar.--Mar. (2008).

58. Suzuki T . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J . ,Matsuda Y . ,Onishi H . , Okada S . ,Outa H . ,Sato M . ,Suzuki S . ,Tomono D . ,Widmann E . ,Yamazaki T . ,and Yim H . :
"An experimental search for strange multibarionic states via the $^{4}He(stopped\ K^{-},YN)$ interaction",
The 4th International Workshop n Nuclear and Particle Physics at J-PARC , Mito , Mar. (2008).

59. Onishi H . :
"A new approach to study the property of phi(1020) meson in medium",
The 4th International Workshop n Nuclear and Particle Physics at J-PARC,(*Science Council of Japan*The physical Society of Japan* J-PARC Center), Mito , Mar. (2008).

60. Tomono D . ,Nakamura S . ,Matsuda Y . ,Gren M . ,Iwasaki M . ,Ishida K . ,Matsuzaki T . ,Watanabe I . , Sakamoto S . ,and Nagamine K . :
"Precision measurement of the muon lifetime wit a pulsed muon beam",
4th International Workshop on Nuclear and Particle Physics at J-PARC (NP08) , (J-Parc, JAEA), Mito , Mar. (2008).

61. Miura N . ,Aruga-Katori H . ,Ito A . ,Schoenhart M . ,Groessinger R . ,Kozlova N . ,and Doerr K . :
"Anomalous field-sweep rate dependence of magnetization process of a spin-glass system $Fe_xMn_{1-x}TiO_3$",
2008 APS March Meeting (MAR08) , New Orleans , USA , Mar. (2008).

2007

62. Sakuma F . :
"Partial decay widths of the phi into e+e- and K+K- pairs in 12 GeV p+A reactions at KEK-PS E325",
Chiral07, Chiral Symmetry in Hadron and Nuclear Physics , (Osaka University), Osaka , Nov. (2007)

63. Akaishi Y. :
"Kaonic nuclei as decaying states",
Chiral07, Chiral Symmetry in Hadron and Nuclear Physics , (Osaka University), Osaka , Nov. (2007)

64. Suzuki T . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R. S . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J. H . ,Matsuda Y . , Okada S . ,Onishi H . ,Outa H . ,Sato M . ,Suzuki S . ,Tomono D . ,Widmann E . ,Yamazaki T . ,and Yim H . :
"YN correlations from stopped K^- reaction on ^4He",
Chiral Symmetry in Hadron and Nuclear Physics , (RCNP, The 21st century COE program), Osaka , Nov. (2007)

65. Akaishi Y.:
"ΛNN three-body force due to coherent Λ-Σ coupling",
International Workshop on New Facet of Three Nucleon Force,˜ 50 years of Fujita-Miyazawa three nucleon force ˜ The University of Tokyo, Tokyo, Oct.(2007)

66. Koike T . and Harada T . :
"Formation of the deeply-bound K^-pp state in the ^3He(in-flight K^-,n) spectrum",
International Conference on Chiral Symmetry in Hadron and Nuclear Physics (CHIRAL07) , (Research Center for Nuclear Physics (RCNP), Osaka University), Suita , Nov. (2007).

67. Kobayashi Y . ,Yamada Y . ,Miyazaki J . ,Kato K . ,Kubo K . ,Yoshida A . ,Nagae D . ,Shimada K . ,and Ueno H . :
"Reactions of ^{57}\$Mn Implanted into γ-O_2",
International Conference on the Applications of Mossbauer Effect (ICAME2007) , (Indian Institute of Technology), Kanpur , India , Oct. (2007).

68. Suzuki T . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R. S . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J. H . ,Matsuda Y . , Okada S . ,Onishi H . ,Outa H . ,Sato M . ,Suzuki S . ,Tomono D . ,Widmann E . ,Yamazaki T . ,and Yim H . :
"Search for strange di/tri-baryon states in ^4He(stopped K^-, d) reaction",
Korea Japan Joint Nuclear Workshop , (JPS,KPS), Jeju , Korea , Oct. (2007).

69. K. Itahashi,
"Recoilless meson bound states production experiments",
Korea Japan Joint Nuclear Workshop , (JPS,KPS), Jeju , Korea , Oct. (2007).

70. Iio M . ,Beer G . ,Bhang H . ,Buehler P . ,Cargnelli M . ,Chiba J . ,Choi S . ,Curceanu C . ,Fukuda Y . , Guaraldo C . ,Hanaki T . ,Hayano R. S . ,Hirtl A . ,Iliescu M . ,Ishikawa T . ,Ishimoto S . ,Ishiwatari T . , Itahashi K . ,Iwai M . ,Iwasaki M . ,Juhasz B . ,Kienle P . ,Marton J . ,Matsuda Y . ,Onishi H . ,Okada S . , Outa H . ,Pietreanu D . ,Sakuma F . ,Sato M . ,Schmid P . ,Sirghi D . ,Sirghi F . ,Suzuki S . ,Suzuki T . , Tatsuno H . ,Tomono D . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"Precise measurement of kaonic helium atoms X-rays",
12th International Conference on Hadron Spectroscopy , (INFN Laboratori Nazionali di Frascati), Rome , Italy , Oct. (2007).

71. Kobayashi Y . ,Yamada Y . ,Tsuruoka Y . ,Kubo K . ,Shoji H . ,Watanabe Y . ,Takayama T . ,Sakai Y . , Sato W . ,Shinohara A . ,Segawa M . ,and Matsue H . :
"Neutron In-beam Mossbauer Spectroscopic Studies of Iron Disulfide at 298 and 78 K",
International Conference on the Applications of Mossbauer Effect (ICAME2007) , (Indian Institute of Technology), Kanpur , India , Oct. (2007).

72. Sielemann R . ,Kobayashi Y . ,Yoshida Y . ,Gunnlaugsson P . ,and Weyer G . :
"Magnetism at Fe-ions Implanted in HOPG Graphite",
International Conference on the Applications of Mossbauer Effect (ICAME2007) , (Indian Institute of Technology), Kanpur , India , Oct. (2007).

73. Yoshida Y . ,Kobayashi Y . ,Yukihira k . ,Hayakawa K . ,Suzuki K . ,Yoshida A . ,Ueno H . ,Yoshimi A . , Shimada K . ,Nagae D . ,Asahi K . ,and Langouche G . :
"Final Lattice Sites and Charge States of ^{57}Fe after Diffusion Processes at High Temperatures Following GeV-implantation of ^{57}Mn into Si", International Conference on the Applications of Mossbauer Effect (ICAME2007) , (Indian Institute of Technology), Kanpur , India , Oct. (2007).

74. Onishi H . and J-PARC E15 c . :
"A search for deeply-bound kaonic nuclear states by in-flight ^{3}He(K-,n) reaction at J-PARC",
11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU2007) , (Forschungszentrum Juelich), Forschungszentrum Juelich , Germany , Sept.--Sept. (2007).

75. Suzuki T . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R. S . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J. H . ,Matsuda Y . , Okada S . ,Onishi H . ,Outa H . ,Sato M . ,Suzuki S . ,Tomono D . ,Widmann E . ,Yamazaki T . ,and Yim H . :
"An experimental search for strange multi-baryonic systems in ^{4}He(stopped K^{-},YN) reaction",
11th International Conference on Meson-Nucleon Physics and the Structure of Nucleon , Juelish , Germany , Sept. (2007).

76. Kameda D . ,Ueno H . ,Asahi K . ,Nagae D . ,Yoshimi A . ,Nagatomo T . ,Sugimoto T . ,Uchida M . , Takemura M . ,Shimada K . ,Takase K . ,Inoue T . ,Kijima G . ,Arai T . ,Suda S . ,Murata J . , Kawamura H . ,Kobayashi Y . ,Watanabe H . ,and Ishihara M . :
"Production of spin-polarized r/a beams via projectile fragmentation reaction",
12th Int. Workshop on Polarized Sources, Targets Polarimetry , (Brookhaven National Laboratory), Brookhaven , USA , Sept. (2007)

77. Kameda D . ,Ueno H . ,Asahi K . ,Nagae D . ,Takemura M . ,Yoshimi A . ,Shimada K . ,Nagatomo T . , Sugimoto T . ,Uchida M . ,Arai T . ,Takase K . ,Suda S . ,Inoue T . ,Murata J . ,Kawamura H . , Watanabe H . ,Kobayashi Y . ,and Ishihara M . :
"Electric quadrupole moments of neutron-rich nuclei ^{32}Al and ^{31}Al",
14th Int. Conf. on Hyperfine Interactions 18th Int. Symp. on Nuclear Quadrupole Interactions , (Universidad Nacional de La Plata), Iguassu Falls , Brazil , Aug. (2007)

78. Ishida K . :
"Muon beam and applications - muon at RIKEN-RAL",
9th International Workshop on Neutrino Factories and Superbeams (NuFact 07) , Okayama , Aug. (2007).

79. Yim H . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R. S . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J. H . ,Matsuda Y . , Okada S . ,Onishi H . ,Outa H . ,Sato M . ,Suzuki S . ,Suzuki T . ,Tomono D . ,Widmann E . ,and Yamazaki T . :
"A search for strange tribaryonic states in ^{4}He(K^{-}stopped, n) reaction",
Nuclear Physics at J-PARC: Pre-symposium of INPC 2007 , (KEK), Tokai Village , June (2007).

80. Okada S . ,Beer G. A . ,Bhang H . ,Cargnelli M . ,Chiba J . ,Choi S . ,Curceanu C. O . ,Fukuda Y . , Hanaki T . ,Hayano R . ,Iio M . ,Ishikawa T . ,Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . , Iwasaki M . ,Juhasz B . ,Kienle P . ,Marton J . ,Matsuda Y . ,Onishi H . ,Outa H . ,Schmid P . ,Sato M . , Suzuki S . ,Suzuki T . ,Tatsuno H . ,Tomono D . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"Precision spectroscopy of the kaonic helium X-rays",
Nuclear Physics at J-PARC: Pre-Symp. of INPC 2007 , Ibaraki , June (2007).

81. Suzuki T . ,Iio M . ,Itahashi K . ,Iwasaki M . ,Matsuda Y . ,Okada S . ,Onishi H . ,Outa H . ,Sato M . , Tomono D . ,Yim H . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R. S . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Iwai M . ,Kienle P . ,Kim J. H . ,Suzuki S . ,Widmann E . ,and Yamazaki T . :
"An experimental search for strange multi-baryonic systems in ^{4}He(stopped K^{-},N) reaction",
International Nuclear Physics Conference (INPC2007) , (Science Council of Japan, RIKEN and others), Tokyo , June (2007).

82. Matsuzaki T . ,Ishida K . ,Imao H . ,Matsuda Y . ,Kawamura N . ,Iwasaki M . ,and Nagamine K . :
"Temperature dependence of tμ to ^{3}He muon transfer rates in T_2 studied by t-t μCF",
International Conference on Muon Catalyzed Fusion and Related Topics (MCF-07) , (Joint Institue for Nuclear Research), Dubna , Russia , June (2007).

83. Kameda D . ,Ueno H . ,Asahi K . ,Nagae D . ,Takemura M . ,Yoshimi A . ,Shimada K . ,Uchida M . , Kijima G . ,Arai T . ,Takase K . ,Suda S . ,Inoue T . ,Murata J . ,Kawamura H . ,Haseyama T . , Kobayashi Y . ,Watanabe H . ,and Ishihara M . :
"Small electric quadrupole moment of ^{32}Al",
International Workshop on Nuclear Structure: New Pictures in the Extended Isospin Space (NS07) , (Yukawa Institute for Theoretical Physics), Kyoto , June (2007)

84. Kameda D . ,Ueno H . ,Asahi K . ,Nagae D . ,Takemura M . ,Yoshimi A . ,Shimada K . ,Uchida M . , Kijima G . ,Arai T . ,Takase K . ,Suda S . ,Inoue T . ,Murata J . ,Kawamura H . ,Haseyama T . , Kobayashi Y . ,Watanabe H . ,and Ishihara M . :
"Small electric quadrupole moment of ^{32}Al: Drastic shape transition between ^{32}Al and ^{31}Mg",
International Nuclear Physics Conference (INPC2007) , (Science Council of Japan, RIKEN and others), Tokyo , June (2007).

85. Koike T . and Harada T . :
"DWIA calculation of ^{3}He(K^{-},n) reaction for searching K^{-}pp bound state",
International Nuclear Physics Conference (INPC2007) , (Science Council of Japan, RIKEN and others), Tokyo , June (2007).

86. Y.Akaishi :
"Structure and production of the basic K^-pp and other K^{bar} nuclear clusters",
International Nuclear Physics Conference (INPC2007) , (Science Council of Japan, RIKEN and others), Tokyo , June (2007)

87. Iio M . ,Ajimura S . ,Beer G . ,Bhang H . ,Buehler P . ,Busso L . ,Cargnelli M . ,Chiba J . ,Choi S . , Curceanu C . ,Faso D . ,Fujioka H . ,Fukuda T . ,Fukuda Y . ,Guaraldo C . ,Hanaki T . ,Hayano R. S . , Hirtl A . ,Iliescu M . ,Ishikawa T . ,Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwasaki M . ,Kienle P . , Marton J . ,Matsuda Y . ,Mizoi Y . ,Morra O . ,Nagae T . ,Onishi H . ,Okada S . ,Outa H . ,Pietreanu D . , Sakaguchi A . ,Sakuma F . ,Sato M . ,Sekimoto M . ,Sirghi D . ,Sirghi F . ,Suzuki S . ,Suzuki T . , Tatsuno H . ,Tomono D . ,Toyoda A . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"A general-purpose liquid target system for hadron experiments at J-PARC",
International Nuclear Physics Conference (INPC2007) , (International Union for Pure and Applied Physics), Tokyo , June (2007)

88. Koike T . and Harada T . :
"The formation of the deeply-bound K^-pp state in ^3He (in-flight K^-, n) reaction spectrum",
International Conference on Muon Catalyzed Fusion and Related Topics (MCF-07) , (Joint Institute for Nuclear Research), Dubna , Russia , June (2007)

89. Ishida K . ,Matsuzaki T . ,Imao H . ,Matsuda Y . ,Iwasaki M . ,Nagamine K . ,Kawamura N . ,Kato M . , Sugai H . ,Uritani A . ,Harano H . ,Matsumoto T . ,and Eaton G. H . :
"Muon catalyzed d-t fusion in non-equilibrated mixtures of T_2 with normal, ortho and para-rich D_2",
International Conference on Muon Catalyzed Fusion and Related Topics (MCF-07) , Dubna , Russia , June (2007).

90. Kameda D . ,Ueno H . ,Asahi K . ,Yoshimi A . ,Haseyama T . ,Kobayashi Y . ,Ishihara M . ,Nagae D . , Takemura M . ,Shimada K . ,Uchida M . ,Arai T . ,Takase K . ,Inoue T . ,Kijima G . ,Suda S . , Murata J . ,Kawamura H . ,Narota K . ,Toyoda T . ,and Watanabe H . :
"Electric quadrupole moments of neutron-rich nuclei ^{32}Al and ^{31}Al",
International Symposium School on Frontiers and Perspectives of Nuclear and Hadron Physics (FPNH07) , (Tokyo Institute of Technology), Tokyo , June (2007).

91. Koike T . and Harada T . :
"The ^3He(in-flight K^-,n) reaction spectrum form the deeply-bound K^-pp state",
Nuclear Physics at J-PARC: Pre-symposium of INPC 2007 , (KEK), Tokai village , June (2007).

92. Matsumoto T . ,Egami T . ,Iseri Y . ,Ogata K . ,Yahiro M . ,and Kamimura M . :
"The method of CDCC for four-body breakup reactions",
5th International Workshop on Direct Reaction with Exotic Beams (DREB2007) , RIKEN , May--June (2007).

93. Sato M . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J . ,Matsuda Y . ,Onishi H . , Okada S . ,Outa H . ,Suzuki S . ,Suzuki T . ,Tomono D . ,Widmann E . ,Yamazaki T . ,and Yim H . :
"A search for strange tribaryonic states in the ^4He(stopped K^-,p) reaction",
Nuclear Physics at J-PARC: Pre-symposium of INPC 2007 , Ibaraki , May (2007).

94. Akaishi Y.:
"Λ-p structure of K^-pp"*,
Mini-workshop on Kaonic Nuclear Clusters, RIKEN, Wako-shi, May 29, 2007

95. Akaishi Y. :
"On the single-channel complex $K^{bar}N$ interaction",
Mini-workshop on Kaonic Nuclear Clusters, RIKEN, Wako-shi, May 29, 2007

96. Akaishi Y. :
"Decay spectra from K^- absorption on NN in ^4He",
Mini-workshop on Kaonic Nuclear Clusters, RIKEN, Wako-shi, May 29, 2007

2006

97. Iwasaki M . :
"Search for kaonic nuclear state by stopped K^- on helium target at kek",
Yukawa International Seminar (YKIS) 2006 New Frontiers in QCD: Exotic Hadrons and Hadronic Matter , (Yukawa Institute for Theoretical Physics), Nov.--Dec. (2006)

98. Koike T . and Harada T . :
"DWIA calculation of ^3He(in-flight K^-,n) reaction",
Yukawa International Seminar (YKIS) 2006 New Frontiers in QCD: Exotic Hadrons and Hadronic Matter , (Yukawa Institute for Theoretical Physics), Kyoto , Nov.--Dec. (2006)

99. Akaishi Y. :
"Deeply bound kaonic nuclei as dense and cold systems",
Yukawa International Seminar (YKIS) 2006 New Frontiers in QCD: Exotic Hadrons and Hadronic Matter , (Yukawa Institute for Theoretical Physics), Kyoto , Nov.--Dec. (2006)

100. Ishida K . :
"RIKEN-RAL, now and in the future",
Workshop on future developments of European muon sources , (NMI3), Abingdon , UK , Nov. (2006).

101. Akaishi Y . :
"Few-body antikaon nuclear bound states - theoretical view",
9th International Conference on Hypernuclear and Strange Particle Physics , Mainz , Germany , Oct. (2006)

102. Iio M . ,Beer G. A . ,Bhang H . ,Cargnelli M . ,Chiba J . ,Choi S . ,Curceanu C. O . ,Fukuda Y . ,Hanaki T . , Hayano R . ,Ishikawa T . ,Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwasaki M . ,Juhasz B . ,Kienle P . , Marton J . ,Matsuda Y . ,Onishi H . ,Okada S . ,Outa H . ,Sato M . ,Schmid P . ,Suzuki S . ,Suzuki T . , Tatsuno H . ,Tomono D . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"A superfluid helium target for the precision spectroscopy of the kaonic helium 3d → 2p X-rays",
9th International Conference on Hypernuclear and Strange Particle Physics (Hyp 2006) , (Johannes Gutenberg-Universitat and Gesellschaft fur Schwerionenforschung mbH (GSI)), Mainz , Germany , Oct.--Oct. (2006).

103. Sato M . ,Bhang H . ,Chiba J . ,Choi S . ,Fukuda Y . ,Hanaki T . ,Hayano R . ,Iio M . ,Ishikawa T . , Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . ,Iwasaki M . ,Kienle P . ,Kim J . ,Matsuda Y . ,Onishi H . , Okada S . ,Outa H . ,Suzuki S . ,Suzuki T . ,Tomono D . ,Widmann E . ,Yamazaki T . ,and Yim H . :
"Experimental study of strange tribaryons in the $^{4}He(stopped\ K^{-},p)$ reaction",
9th International Conference on Hypernuclear and Strange Particle Physics (Hyp 2006) , Mainz , Germany , Oct. (2006).

104. Outa H . :
" Weak decay - experimental results "
IX International Conference on Hypernuclear and Strange Particle Physics (HYP06) Mainz, Germany Oct.10th (2006)

105. Bakule P . :
"Laser ionization of muonium - pulsed ultra low energy muon source for material studies",
International Conference on Laser Probing 2006 (LAP 2006) , (Vienna University of Technology), Vienna , Austria , Sept. (2006).

106. Matsuda Y . :
"Progress of laser ionization method for LEM",
1st Swiss Japan Workshop on the applications and on new developments in muon spectroscopy on novel materials , (High Energy Accelerator Research Organization), Tsukuba , Sept. (2006).

107. Tonishi J . ,Ueda M . ,Suzuki T . ,Oosawa A . ,Goto T . ,Adachi T . ,Koike Y . ,Fujita M . ,and Yamada K . :
"Local structure in single crystals of La-based High T_c Cuprates",
Yamada Conference LX on Research in High Magnetic Fields (RHMF2006) , Sendai , Aug.--Aug. (2006).

108. Hachitani K . :
"Possible octupolar order in filled skutterudite $SmRu_4P_{12}$ probed by ^{31}P-NMR and μSR",
1st International Symposium of Quantum Beam Science Directorate of JAEA (ICM2006 Satellite Conference) , Tokai-mura, Ibaraki Pref. , Aug. (2006)

109. Ohira-Kawamura S . ,Saito A . ,and Miyasaka H . :
"Muon spin relaxation studies on Mn^{III}_2-Ni^{II} single-chain magnet and single-molecule magnet",
10th International Conference on Molecule-based Magnets (ICMM2006) , Victoria BC , Canada , Aug. (2006)

110. Suzuki T . ,Saito T . ,Osawa A . ,Goto T . ,Sasaki T . ,Awaji S . ,Watanabe K . ,Kobayashi N . ,and Manaka H . :
"Magnetic field effect on the magnetic torque and the magnetostriction in $(CH_3)_2CHNH_3CuCl_3$",
Yamada Conference LX on Research in High Magnetic Fields (RHMF2006) , (High Field Laboratory for Superconducting Materials Institute for Materials Research Tohoku University), Sendai , Aug. (2006)

111. Fujiwara T . ,Oosawa A . ,Tsunoda R . ,Goto T . ,Suzuki T . ,Shindo Y . ,Tanaka H . ,Sasaki T . , Kobayashi N . ,Awaji S . ,and Watanabe K . :
"Cu-NMR Study on disordered dimer system $(Tl_{1-x}K_x)CuCl_3$ with the Bose-glass ground state",
Yamada Conference LX on Research in High Magnetic Fields (RHMF2006) , Sendai , Aug.--Aug. (2006).

112. Kanada K . ,Saito T . ,Oosawa A . ,Goto T . ,Suzuki T . ,and Manaka H . :
"Magnetic order in the solid solution of two spin-gap systems $(CH_3)_2CHNH_3Cu(Cl_{1-x}Br_x)_3$",
ICM2006 Satellite Conference: 1st International Symposium of Quantum Beam Science Directorate of JAEA, Advances in Neutron, Synchrotron Radiation, μSR and NMR Researches (QuBS2006) , Tokai , Aug.--Aug. (2006).

113. Okada S . ,Beer G. A . ,Bhang H . ,Cargnelli M . ,Chiba J . ,Choi S . ,Curceanu C. O . ,Fukuda Y . , Hanaki T . ,Hayano R . ,Iio M . ,Ishikawa T . ,Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . , Iwasaki M . ,Juhasz B . ,Kienle P . ,Marton J . ,Matsuda Y . ,Onishi H . ,Outa H . ,Schmid P . ,Sato M . , Suzuki S . ,Suzuki T . ,Tatsuno H . ,Tomono D . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"*Precision measurement of the kaonic helium 3d→2p x-rays*",
9th Conference on the Intersections of Particle and Nuclear Physics CIPANP 2006 , Westin Rio Mar Beach , Puerto Rico , Aug. (2006).

114. Jonsson P. E . ,Takayama H . ,Aruga-Katori H . ,and Ito A . :
"Absence of phase transition in a magnetic field in the $Fe_{0.55}Mn_{0.45}TiO_3$ Ising spin glass",
International Conference on Magnetism (ICM 2006) , Kyoto , Aug. (2006).

115. Suzuki T . ,Watanabe I . ,Osawa A . ,Goto T . ,Yamada F . ,and Tanaka H . :
"Muon-Spin-Relaxation study on randomness introduced $Tl_{1-x}K_xCuCl_3$ with x = 0.44",
ICM2006 Satellite Conference: 1st International Symposium of Quantum Beam Science Directorate of JAEA, Advances in Neutron, Synchrotron Radiation, μSR and NMR Researches (QuBS2006) , (Quantum Beam Science Directorate of JAEA), Tokai , Aug. (2006).

116. Ishida K . :
"Muon catalyzed fusion",
8th International Workshop on Neutrino Factories and Superbeams (NuFact 06) , (University of California, Irvine), Irvine , USA , Aug. (2006)

117. Kikkawa A . ,Katsumata K . ,Honda Z . ,Watanabe I . ,Suzuki T . ,and Matsuzaki T . :
"Evolution of the spin-gap in a spin-ladder material detected by μSR technique",
1st International Symposium of Quantum Beam Science Directorate of JAEA (ICM2006 Satellite Conference) , (JAEA), Tokai , Aug. (2006)

118. Outa H.:
"Non-mesonic Weak Decay of 5-Lambda-He and 12-Lambda-C Hypernuclei Formed by (pi+,K+) Reaction Weak decay "
18th International IUPAP Conference on Few-Body Problems in Physics Santos, San Paulo, Brazil Aug. 22 (2006)

119. Iwasaki M . :
"Kaonic-Helium 3d-2p X-ray experiment",
International Workshop on Exotic hadronic atoms, deeply bound kaonic nuclear states and antihydrogen: present results, future challenges , (European Cneter for Theoretical Studies in Nuclear Physics and Related Areas), Trento , Italy , June (2006).

120. K. Itahashi,
"Future programs for the precision spectroscopy of pionic atoms in nuclear reactions"
International Workshop on Exotic hadronic atoms, deeply bound kaonic nuclear states and antihydrogen: present results, future challenges , (European Cneter for Theoretical Studies in Nuclear Physics and Related Areas), Trento , Italy , June (2006).

121. Onishi H . and J-PARC E15 c . :
"A search for deeply-bound kaonic nuclear states by in-flight 3He(K-,n) reaction at J-PARC",
International Workshop on Exotic hadronic atoms, deeply bound kaonic nuclear states and antihydrogen: present results, future challenges , (ECT* Trento), Trento , Italy , June (2006).

122. Akaishi Y . :
"Kaonic nuclei in reply to recent criticisms (Theory)",
International Workshop on Exotic hadronic atoms, deeply bound kaonic nuclear states and antihydrogen: present results, future challenges , (European Center for Theoretical Nuclear Physics and Related Areas), Trento , Italy , June (2006)

123. Iwasaki M . :
"Kaonic Atoms and Search for Kaonic Nuclei",
NP2006 Nuclear Physics Symposium , Shanghai , China , May (2006).

124. Okada S . ,Beer G. A . ,Bhang H . ,Cargnelli M . ,Chiba J . ,Choi S . ,Curceanu C. O . ,Fukuda Y . , Hanaki T . ,Hayano R . ,Iio M . ,Ishikawa T . ,Ishimoto S . ,Ishiwatari T . ,Itahashi K . ,Iwai M . , Iwasaki M . ,Juhasz B . ,Kienle P . ,Marton J . ,Matsuda Y . ,Onishi H . ,Outa H . ,Schmid P . ,Sato M . , Suzuki S . ,Suzuki T . ,Tatsuno H . ,Tomono D . ,Widmann E . ,Yamazaki T . ,Yim H . ,and Zmeskal J . :
"Precision spectroscopy of the kaonic Helium 3d→2p X-rays",
YITP Workshop ``Hadrons at finite density" (HFD06) , Kyoto , Feb. (2006).

125. Akaishi Y. :
"Deeply bound kaonic nuclear states in reply to recent criticisms".
YITP Workshop ``Hadrons at finite density" (HFD06) , Kyoto , Feb. (2006).

126. Akaishi Y. :
"Real and model descriptions of nuclei",
RIKEN Lecture Series: RIKEN, Wako-shi, Jan. (2006)

127. Akaishi Y. :
"Coherent Λ–Σ coupling in neutron-rich nuclei",
RIKEN Lecture Series: RIKEN, Wako-shi, Jan. (2006)

128. Akaishi Y. :
"Deeply bound kaonic nuclei",
RIKEN Lecture Series: RIKEN, Wako-shi, Jan. (2006)

2005

129. Akaishi Y. :
“Coherent $\Lambda-\Sigma$ coupling in neutron-rich nuclei”,
Mandalay Winter School on Physics: Mandalay, Myanmar, Dec (2005)

130. Akaishi Y. :
“Real and model descriptions of nuclei”,
Mandalay Winter School on Physics: Mandalay, Myanmar, Dec (2005)

131. Akaishi Y. :
“Deeply bound kaonic nuclei”,
Mandalay Winter School on Physics: Mandalay,
Myanmar, Dec (2005)

132. Matsumoto T . ,Egami T . ,Hiyama E . ,Ogata K . ,Iseri Y . ,Kamimura M . ,and Yahiro M . :
"Four-body CDCC analyses of $^{6}He+^{12}C$ and $^{6}He+^{209}Bi$ scattering",
RIKEN-CNS RIBF International Workshop ``Correlation and Condensation: New Features in Loosely Bound and Unbound Nuclear States" , Wako , Dec. (2005).

133. Akaishi Y . :
"Strange tribaryons: therory",
Workshop on Hadron Structure at J-PARC (J-PARC-HS05) , (KEK), Tsukuba , Nov.--Dec. (2005)

134. Hachitani K . :
"Spontaneous time reversal symmetry breakdown associated with metal-insulator transition in $SmRu_4P_{12}$ probed by μSR",
Joint Workshop on NQP-skutterudites and NPM in multi-approach , (Tokyo Metropolitan University), Hachioji , Nov. (2005).

135. Nemura H . and Nakamoto C . :
"Study of pentaquark and $\Lambda(1405)$",
Particles and Nuclei International Conference (PANIC05) , Santa Fe , USA , Oct. (2005).

136. Outa H.:
“Non-mesonic and Mesonic Weak Decay of 5-Lambda-He”
Particle and Nuclei International Conference (PANIC05)
Santa Fe, New Mexico Oct. 24 (2005)

137. Ohira S . ,Shimizu Y . ,Kanoda K . ,and Saito G . :
"Spin liquid state in κ-(BEDT-TTF)$_2Cu_2(CN)_3$ studied by muon spin relaxation method",
6th International Symposium on Crystalline Organic Metals, Superconductors, and Ferromagnets (ISCOM 2005) , Key West , USA , Sept. (2005).

138. Nemura H . and Nakamoto C . :
"Semirelativistic calculations of exotic systems",
2nd Joint Meeting of the Nuclear Physics Divisions of the APS and JPS (Hawaii 2005) , Maui , USA , Sept. (2005)

139. . Akaishi Y . :
"Kaonic nuclei-dense and cold nuclear systems",
2nd Joint Meeting of the Nuclear Physics Divisions of the APS and JPS (Hawaii 2005) , Maui , USA , Sept. (2005).

140. Iwasaki M . :
"Strange trybaryon and present experimental program",
2nd Joint Meeting of the Nuclear Physics Divisions of the APS and JPS (Hawaii 2005) , Maui , USA , Sept. (2005).

141. Egami T . ,Ogata K . ,Matsumoto T . ,Hiyama E . ,Iseri Y . ,Kamimura M . ,and Yahiro M . :
"Four-body CDCC analysis of $^{6}He+^{209}Bi$ scattering near Coulomb barrier energies",
2nd Joint Meeting of the Nuclear Physics Divisions of the APS and JPS (Hawaii 2005) , Maui , USA , Sept. (2005).

142. Koike T . :
"Electron population during the cascade of kaonic nitrogen atoms",
2nd Joint Meeting of the Nuclear Physics Divisions of the APS and JPS (Hawaii 2005) , Maui , USA , Sept. (2005).

143. K. Itahashi,
"Future Steps of Pionic Atom Spectroscopy",
2nd Joint Meeting of the Nuclear Physics Divisions of the APS and JPS (Hawaii 2005) , Maui , USA , Sept. (2005).

144. Hachitani K . :
"^{31}P-NMR and μSR studies of filled skutterudite compound $SmRu_4P_{12}$",
5th International Symposium on Advanced Science Research in celebration of the World Year of Physics 2005 (ASR-WYP-2005) : Advances in the Physics and Chemistry of Actinide Compounds , (JAERI), Tokai-mura, Ibaraki Pref. , Sept. (2005).

145. Tonishi J . ,Suzuki T . ,and Goto T . :
"Anomalous change of Hall coefficient in overdoped $La_{2-x}Sr_xCu_{1-y}Zn_yO_4$ around $x = 0.2$", 24th International Conference on Low Temperature Physics (LT24) , Orlando , USA , Aug.--Aug. (2005).

146. Inoue H . ,Tani S . ,Hosoya S . ,Suzuki T . ,Goto T . ,Tanaka H . ,Sasaki T . ,and Kobayashi N . :
"^{2}D, $^{35/37}Cl$, $^{63/65}Cu$-NMR study on quantum spin system NH_4CuCl_3",
24th International Conference on Low Temperature Physics (LT24) , Orlando , USA , Aug.--Aug. (2005).

147. Goto T . ,Ueda M . ,Sumikawa H . ,Suzuki T . ,Fujita M . ,Yamada K . ,Koike Y . ,and Adachi T . : *"Backling of the CuO_2 plane in single crystals of La-based high-T_c cuprates observed by NMR"*, 24th International Conference on Low Temperature Physics (LT24) , Orlando , USA , Aug.--Aug. (2005).

148. Suzuki T . ,Ota T . ,Tonishi J . ,and Goto T . :
"Increase of the sound velocity by magnetic fields in $La_{2-x}Sr_xCuO_4$ around $x = 0.220$",
24th International Conference on Low Temperature Physics (LT24) , (Department of Physics, University of Florida),Orlando ,USA ,Aug.--Aug. (2005).

149. Bakule P . :
"Pulsed source of ultra low energy muons at RIKEN-RAL",
10th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2005) , (University of Oxford), Oxford , UK , Aug. (2005).

150. Ohira S . ,Tamura M . ,Kato R . ,and Iwasaki M . :
"Magnetic order and charge separation in 2D distorted triangular lattice systems β*'-X[Pd(dmit)*$_2$*]*$_2$*"*,
10th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2005) , (University of Oxford), Oxford , UK , Aug. (2005).

151. Matsuda Y . :
"Generation of 10ns pulses of low energy muons with external trigger capability",
10th International Conference on Muon Spin Rotation, Relaxation and Resonance (μSR2005) , (University of Oxford), Oxford , UK , Aug. (2005)

152. Hachitani K . and Watanabe I . :
"^{31}*P-NMR and* μ*SR studies of filled skutterudite compounds* RRu_4P_{12} *(R: Sm,Gd)"*,
International Conferenve on Strongly Correlated Electron Systems (SCES'05) , (Vienna University of Technology), Vienna , Austria , July (2005).

153. Hachitani K . and Watanabe I . :
"^{31}*P-NMR and* μ*SR studies of filled skutterudite compounds* SmT_4P_{12} *(T: Fe,Os)"*,
International Conferenve on Strongly Correlated Electron Systems (SCES'05) , (Vienna University of Technology), Vienna , Austria , July (2005).

154. Akaishi Y . :
"Few-body kaonic nuclei and strange tribaryons",
Workshop on Hadron Physics at COSY (HPC2005) , (Forschungszentrum Juelich), Bad Honnef , Germany , July (2005).

155. Nemura H . :
"Full coupling dynamics of doubly strange hypernuclei",
3rd Asia-Pacific Conference on Few-Body Problems in Physics (APFB05) , (Suranaree University of Technology), Nakhon Ratchasima , Thailand , July (2005).

156. Koike T . :
"Cascade calculation of kaonic nitrogen atoms involving the electron refilling process",
3rd Asia-Pacific Conference on Few-Body Problems in Physics (APFB05) , (Suranaree University of Technology), Nakhon Ratchasima , Thailand , July (2005).

157. Akaishi Y . :
"Coherent $\Lambda-\Sigma$ *coupling and neutron-rich hypernuclei"*,
International Workshop of Hypernuclei with Heavy Ion Beams (HypHI05) , (GSI), Darmstadt , Germany , June (2005).

158. Outa H.:
“Mesonic and Non-mesonic Weak Decay of Light Hypernuclei”
International Workshop on Hypernuclei woth Heavy Ion Beams (HYPHI05)
GSi, Darmstadt, Germany Jun. 20 (2005)

159. Ishida K . :
"Muon catalyzed fusion",
7th International Workshop on Neutrino Factories and Superbeams (NuFact 05) , (Laboratori Nazionali di Frascati), Rome , Italy , June (2005).

160. Matsuda Y . :
"Generation of low energy muon with laser resonant ionization of muonium atoms",
7th International Workshop on Neutrino Factories and Superbeams (NuFact 05) , (Laboratori Nazionali di Frascati), Rome , Italy , June (2005).

161. Akaishi Y. :
”Strange tribaryons as Kbar-mediated dense nuclear systems”,
The annual spring meeting of KPS, Ewha Women’s University, Seoul, Korea, April 22-23, (2005)

162. Akaishi Y. :
” Coherent Lambda-Sigma coupling in neutron-rich hypernuclei”,
APCTP, Ewha Women’s University, Seoul, Korea, April 21, (2005)

163. Akaishi Y. :
“Deeply-bound kaonic nuclear states - a new paradigm in Nuclear Physics”,
Colloquium at Physics Department, Seoul National University, Seoul, Korea, April 20, 2005

164. Akaishi Y.
“Strange tribaryons as kaonic nuclear systems”
Japan-US Workshop, Osaka University, Toyonaka, Japan, April 8-9, 2005

165. Bakule P . and Matsuda Y . :
"Generation of slow muons by laser ionization of muonium",
International Workshop on Muon Science Instrumentation (MSI-05) , (JSP Core-to-Core Program on Development of Advanced Muon and Positron Beam), Tsukuba , Mar. (2005).

166. Ishida K . :
"Muon catalyzed fusion experiment with high-intensity pulsed muon beams",
International Workshop on Muon Science Instrumentation (MSI-05) , (JSP Core-to-Core Program on Development of Advanced Muon and Positron Beam), Tsukuba , Mar. (2005).

167. Akaishi Y . :
"Unique feature and perspectives of nuclear kbar bound systems",
International Workshop on Chiral Restoration in Nuclear Medium (Chiral 05) , (RIKEN), Wako , Feb. (2005).

168. K. Itahashi,
"Present and Next Steps of Pionic Atom Spectroscopy",
International Workshop on "Chiral Restoration in Nuclear Medium", (Chiral 05) , (RIKEN), Wako , Feb. (2005).

169. Koike T . :
"Electron population during the cascade of kaonic nitrogen atoms",
International Conference on Exotic Atoms and Related Topics (EXA 05) , (Stefan Meyer Institute for subatomic Physics and Austrian Academy of Science), Vienna , Austria , Feb. (2005).

170. Akaishi Y . :
"Problems of kaonic helium atoms in relation to kaonic nuclear bound states",
International Conference on Exotic Atoms and Related Topics (EXA 05) , (Stefan Meyer Institute for subatomic Physics and Austrian Academy of Science), Vienna , Austria , Feb. (2005).

171. Iwasaki M . :
"Kaonic deeply bound states, the first experimental results",
International Conference on Exotic Atoms and Related Topics (EXA 05) , (the Austrian Academy of Sciences), Vienna , Austria , Feb. (2005)

172. K. Itahashi,
"New Steps of Pionic Atom Spectroscopy",
International Conference on Exotic Atoms and Related Topics (EXA 05) , (the Austrian Academy of Sciences), Vienna , Austria , Feb. (2005)

173. Outa H. :
" Search for Deeply Bound Kaonic States in K- Absorption at Rest on 4He ",
Nuclear and Hadronic Systems and Quark Degrees of Freedom (QNP05)
Phoenix Park, Kangwondo, Republic of Korea, Feb. 22 (2005)

174. K. Itahashi,
"Pionic Atoms with Unstable Nuclei",
NUSTAR workshop (2005)

175. K. Itahashi,
"Results and Future of Pionic Atom Spectroscopy",
Japan-Germany WS, RIKEN (2005)

2004

176. Matsuzaki T . :
"Recent researches at the RIKEN-RAL Muon Facility; Muon catalyzed d-t fusion",
The 9th Asia Pacific Physics Conference (APPC 2004) , (Association of Asia Pacific Physical Societies and others), Hanoi , Vietnam , Oct. (2004).

177. Matsuda Y . :
"Development of slow muon beam line at the RIKEN-RAL muon facility and new applications of μSR technique",
The 9th Asia Pacific Physics Conference (APPC 2004) , (Association of Asia Pacific Physical Societies and others), Hanoi , Vietnam , Oct. (2004).

178. Ohira-Kawamura S . ,Fujita W . ,and Awaga K . :
"μSR study on organic ferromagnetism driven by evaporation of crystal solvent",
9th International Conference on Molecule-based Magnets (ICMM2004) , Tsukuba , Oct. (2004).

179. Akaishi Y.:
“Prospects of kaonic nuclear physics”,
Lecture & Examination of Doctor Theses at Mandalay University, Mandalay, Myanmar, September 22-25, 2004

180. Akaishi Y:
“Strangeness hadrons in few-body nuclei”,
10th International Symposium on Meson-Nucleon Physics and the Structure of the Nucleon Beijing, China, Aug – Sep, (2004).

181. Akaishi Y.:
“Real and model descriptions of nuclei and neutron-rich hypernuclei”,
3rd International Summer School on Subatomic Physics: Frontiers of Nuclear Physics, Beijing, China, Aug (2004).

182. Akaishi Y.:
“Deeply bound kaonic nuclei”,
3rd International Summer School on Subatomic Physics: Frontiers of Nuclear Physics, Beijing, China, Aug, (2004).

183. Outa H. :
“Experiments of the weak decay of Λ hypernuclei at J-PARC”,
The 3rd International Workshop on Nuclear and Particle Physics at J-PARC
Tokai, Ibaraki, Japan, Aug 4th (2004)

184. Strasser P . ,Nagamine K . ,Matsuzaki T . ,Ishida K . ,Matsuda Y . ,and Iwasaki M . :
"Muonic atoms of radioactive nuclei",
6th International Workshop on Neutrino Factories and Superbeams (NuFact 04) , Osaka , July--Aug. (2004).

185. Tomono D . :
"Muon lifetime measurement with pulsed muon beam",
6th International Workshop on Neutrino Factories and Superbeams (NuFact 04) , Osaka , July--Aug. (2004).

186. Ishida K . :
"Muon catalyzed fusion",
6th International Workshop on Neutrino Factories and Superbeams (NuFact 04) , Osaka , July--Aug. (2004).

187. Koike T . :
"Electron population during the cascade process of kaonic nitrogen atoms and charged kaon mass",
International Workshop on Strangeness Nuclear Physics (SNP2004) , (RCNP and others), Toyonaka , July (2004).

188. Outa H. :
“Experiments on Hypernuclear Weak Decay”,
International School of Physics "Enrico Fermi" Course CLVIII "Hadron Physics", Varenna on Lake Como, Italy , Jun, 23-24 (2004)

189. Akaishi Y. :
“Kaonic nuclei and kaonic optical potential”,
Seminar at Technischen Universitaet Muenchen, Muenchen, Germany, June 17, (2004).

190. Akaishi Y. :
“Deeply bound kaonic nuclear states – a new paradigm in Nuclear Physics”,
Seminar at GSI, Darmstadt, Germany, June 14, (2004)

191. Akaishi Y. :
“Deeply bound mesonic nuclear states”,
International Workshop on Physics at Meson Factories, Frascati, Italy, June 7-11, (2004).

192. Outa H. :
“Search for Deeply Bound Kaonic Nuclei at FINUDA”,
DAFNE 2004: Physics at meson factories, Laboratori Nazionali di Frascati, Italy, Jun. 8th (2004)

193. K. Itahashi,
"Pionic Atoms with Unstable Nuclei",
International Nuclear Physics Conference, Goteborg Sweden (2004)

2003

194. Outa H. :
“Hypernuclear Weak Decay Experiments at KEK: n-n and n-p Coincidence Measuerments”,
VIII International Conference on Hypernucleara and Strange Particle Physics. (HYP03), Jefferson Lab, Newport News, Virginia, Dec 14th (2003)

195. Matsuzaki T . ,Nagamine K . ,Ishida K . ,Kawamura N . ,Imao H . ,Matsuda Y . ,Iwasaki M . ,Kato M . , Sugai H . ,Tanase M . ,Nakamura S . ,Kudo K . ,Takeda N . ,and G. H. E . :
"Strong n-alpha correlations in the t+t fusion reactions observed in the muon catalyzed t-t fusion",
International Conference on FUSION03: From a Tunneling Nuclear Microscope to Nuclear Processes in Matter , Matsushima , Nov. (2003).

196. Strasser P . ,Nagamine K . ,Matsuzaki T . ,Ishida K . ,Matsuda Y . ,Itahashi K . ,and Iwasaki M . :
"Progress in muonic atom spectroscopy with RI beams",
Radioactive Nuclear Beams 6 (RNB6) , (Argonne National Laboratory), Argonne , USA , Sept. (2003).

197. Yamanaka N . ,Kino Y . ,Takano Y . ,Kudo H . ,and Ichimura A . :
"Direct positron annihilation in a dense gas",
ICPA-13: 13th International Conference on Positron Annihilation (KYOTO 2003) , Kyoto , Sept. (2003).

198. Ohira-Kawamura S . ,Tamura M . ,Kato R . ,Watanabe I . ,and Iwasaki M . :
"μSR study on magnetic property of [Pd(dmit)$_2$] salts",
5th International Symposium on Crystalline Organic Metals, Superconductors and Magnets (ISCOM' 2003) , Port-Bourgenay , France , Sept. (2003).

199. Outa H. :
“Latest Results from KEK on Hypernuclear Physics and Perspective at J-PARC”
Workshop on e+ e- in 1-2GeV range: Physics and Accelarator Prospects, Alghero, Italy, Sep. 12th (2003)

200. Yamanaka N . ,Kino Y . ,Takano Y . ,Kudo H . ,and Ichimura A . :
"Enhancement of direct positron annihilation due to temporal capture during a collision",
23rd International Conference on Photonic Electronic and Atomic Collisions (ICPEAC 2003) , Stockholm , Sweden , July (2003).

201. Matsuda Y . :
"Generation of ultra slow muon beam by laser resonant ionization of muonium atoms",
6th International Workshop on Neutrino Factories and Superbeams (NuFact 04) , Osaka , July--Aug. (2004)

202. Strasser P . ,Nagamine K . ,Matsuzaki T . ,Ishida K . ,Matsuda Y . ,Itahashi K . ,and Iwasaki M . :
"Radioactive muonic atom studies with intense muon beams",
5th International Workshop on Neutrino Factories Superbeams (NuFact 03) , New York , USA , June (2003).

203. Ishida K . :
"Non-particle physics with intense muon beams",
5th International Workshop on Neutrino Factories Superbeams (NuFact 03) , New York , USA , June (2003).

204. Heuser J . ,Enyo H . ,Onishi H . ,and NA60 C . :
"The NA60 experiment: results and perspectives",
8th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2003) , New York , USA , May (2003).

205. Yamanaka N . and Kino Y . :
"Antihydrogen formation in antiproton-positronium collisions",
International Conference on Low Energy Antiproton Physics (LEAP'03) , (Antimatter Science Project, University of Tokyo, RIKEN and KEK), Yokohama , Mar. (2003).

206. Okamoto S . and Khaliullin G . :
"Orbital ordering and magnetic interaction in ferromagnetic titanates",
Annual APS March Meeting 2003 , Austin , USA , Mar. (2003).

2002

207. Strasser P . ,Nagamine K . ,Matsuzaki T . ,Ishida K . ,Matsuda Y . ,Itahashi K . ,and Iwasaki M . :
"Generation and investigation of radioactive muonic atoms in solid hydrogen films",
International Symposium on Physics of Unstable Nuclei (ISPUN02) , (Institute for Nuclear Science and Technique (Hanoi), Institute for Physics (Hanoi)), Halong Bay , Vietnam , Nov. (2002).

208. Ishida K . :
"Highlights of μCF experiments at RIKEN/RAL",
International Workshop on Exotic Atoms - Future Perspectives (EXA 2002) , (Institute for Medium Energy Physics of Austrian Academy of Sciences), Vienna , Austria , Nov. (2002)

209. Matsuda Y . :
"Possibility on a point positive muon source for a neutrino factory by laser excitation of a muonium",
The 4th International Workshop on Neutrino Factories based on Muon Storage Rings (NuFACT'02) , (Imperial Colleage), London , UK , July (2002).

210. Strasser P . ,Nagamine K . ,Matsuzaki T . ,Ishida K . ,Matsuda Y . ,Itahashi K . ,and Iwasaki M . :
"Muon spectroscopy with unstable nuclei",
The 4th International Workshop on Neutrino Factories based on Muon Storage Rings(NuFACT'02), (Imperial College London), London,UK ,July (2002).

211. Strasser P . ,Iwasaki M . ,Matsuzaki T . ,Ishida K . ,Watanabe I . ,Matsuda Y . ,Itahashi K . ,Ohira S . ,Bakule P . ,Pratt F. L . ,Kadono R . ,Nakamura S . ,Kawamura N . ,and Nagamine K . :
"The RIKEN-RAL muon facility",
Muons at ISIS: Meeting with Prof. J. Wood , (RAL and ISIS), Oxford , UK , July (2002).

212. Bakule P . ,Matsuda Y . ,Miyake Y . ,Strasser P . ,Simomura K . ,Makimura S . ,Ishida K . ,Matsuzaki T . ,Watanabe I . ,and Nagamine K . :
"Slow muon experiment by laser resonant ionization method at RIKEN-RAL muon facility",
International Conference on Laser Probing (LAP2002) , (Katholieke Universiteit Leuven), Leuven , Belgium , July (2002).

213. Ishida K . :
"Muon catalyzed fusion",
4th NuFact'02 Workshop: Neutrino Factories based on Muon Storage Rings , (Imperial College and others), London , UK , July (2002).

214. Ohira S . ,Awaga K . ,Fujita W . ,Watanabe I . ,and Nagamine K . :
"μSR study on a metal complex having a ferromagnetic linear chain p-NPNN·Cu(hfac)$_2$",
9th International Conference on Muon Spin Rotation/Relaxation/Resonance (μSR2002) , Williamsburg , USA , June (2002).

215. Matsuzaki T . :
"Muon catalyzed fusion",
The 21st Tritium Focus Group Meeting , (Laboratory for Laser Energetics, University of Rochester), Rochester , USA , May (2002).

216. Yamase H . :
"Theoretical study of magnetic excitation in LSCO",
International Workshop on Future of Muon Science , (KEK and RIKEN), Tsukuba , Mar. (2002).

217. Matsuzaki T . :
"μCF experiments at RIKEN-RAL (t-t μCF)",
International Workshop on Future of Muon Science , (KEK and RIKEN), Wako , Mar. (2002).

218. Ishida K . :
"Production and application of high-intensity low-energy muon beams: Recent development",
FFAG Accelerator Workshop (FFAG02) , (KEK), Tsukuba , Feb. (2002).

3.5.4. Oral Presentation (in Japanese)

2010

1. 長友 傑,小林 義男,久保 謙哉,山田 康洋,三原 基嗣,佐藤 渉,宮崎 淳,佐藤 眞二,北川 敦志:
″不安定核 ^{57}Mn ビームを用いたインビーム・メスバウアー分光の現状″,
第 11 回メスバウアー分光研究会シンポジウム , 豊中 , 3 月 (2010).

2009

2. Risdiana . . ,Fitrilawati . . ,Siregar R .,Hidayat R .,Nugroho A. A . ,Tjia M .,石井 康之,
渡邊 功雄:
″Muon spin relaxation study of spin dynamics in poly(3-alkylthiophene)″,
Molecular Ensemble 2009,和光 , 12--12 月 (2009).

3. 長友 傑,小林 義男,三原 基嗣,久保 謙哉,山田 康洋,佐藤 渉,宮崎 淳,佐藤 眞二,北川 敦志:
″プラスチック検出器を用いた ^{57}Mn インビームメスバウアー分光の S/N 比の向上″,
平成 21 年度京都大学原子炉実験所専門研究会「短寿命核および放射線を用いた物性研究 (II)」研究会 ,
熊取 , 12 月 (2009).

4. 石井 康之,渡邊 功雄,伊藤 幹直,松尾 司,小林 義男,松崎 禎市郎,玉尾 皓平:
″μSR studies of linear two-coordinate iron complexes″,
Symposium Molecular Ensemble 2009 , Wako , 12 月 (2009).

5. 中島 紗織,鈴木 栄男,渡邊 功雄,真中 浩貴,後藤 貴行,Alex A . :
″量子スピンラダー磁性体 IPACu$(Cl_xBr_{1-x})_3$の磁気秩序相におけるμSR･NMR″,
日本物理学会 2009 年秋季大会 , 熊本大学黒髪キャンパス , 9--9 月 (2009).

6. 廣井 政彦,久松 徹,伊藤 昌和,鈴木 栄男,大石 一城,石井 康之,渡邊 功雄:
″ホイスラー化合物 $Ru_{1.9}Fe_{0.1}CrSi$ のμSR″,
日本物理学会 2009 年秋季大会 , 熊本大学黒髪キャンパス , 9--9 月 (2009).

7. 鈴木 栄男,石井 康之,大石 一城,Risdiana . ,渡邊 功雄,後藤 貴行,山田 文子,山田 基樹,田中 秀数:
″量子スピン系 $Tl(Cu_{1-x}Mg_x)Cl_3$ (x = 0.015)における圧力下ミュオン実験″,
日本物理学会 2009 年秋季大会 , 熊本 , 9--9 月 (2009).

8. 大石 一城,伊藤 孝,髭本 亘,上原 啓,小沢 克也,山崎 敬大,君嶋 義英,上原 政智:
″μSR から眺めたアンチペロブスカイト型 伝導体 $ZnNNi_3$ の準粒子励起″,
日本物理学会 2009 年秋季大会 , (日本物理学会), 熊本 , 9 月 (2009).

9. 佐藤 光秀,川股 隆行,上坂 正憲,工藤 一貴,小林 典男,小池 洋二:
″一次元ボンド交替鎖を持つ $Pb_2V_3O_9$ におけるトリプロンのボーズ･アインシュタイン凝縮転移と熱伝導″,
日本物理学会 2009 年秋季大会, (日本物理学会), 熊本, 9 月 (2009).

10. 大久保 晋,近藤 健太,日野 俊一,藤澤 真士,櫻井 敬博,太田 仁,菅原 直樹,川股 隆行,小池 洋二:
″ボンド交替系 $Pb_2V_3O_9$$単結晶試料の強磁場 ESR 測定 II″,
日本物理学会 2009 年秋季大会, (日本物理学会), 熊本, 9 月 (2009).

11. 本堂 英,益田 隆嗣,川股 隆行,佐藤 光秀,小池 洋二:
"S=1/2 スピン・ギャップ物質 $Pb_2V_3O_9$ の磁気励起",
日本物理学会 2009 年秋季大会, (日本物理学会), 熊本, 9 月 (2009).

12. 長友 傑,小林 義男,久保 謙哉,山田 康洋,三原 基嗣,佐藤 渉,宮崎 淳,佐藤 眞二,北川 敦志:
"酸化マグネシウム固体中の ^{57}Mn インビーム・メスバウアー分光実験",
2009 日本放射化学会年会・第 53 回放射化学討論会 , (日本放射化学会), 桜上水 , 9 月 (2009).

13. 長友 傑,小林 義男,久保 謙哉,山田 康洋,三原 基嗣,佐藤 渉,宮崎 淳,佐藤 眞二,北川 敦志:
プラスチックシンチレーション検出器を用いた ^{57}Mn インビームメスバウアー分光における S/N 比の向上,
2009 日本放射化学会年会・第 53 回放射化学討論会 , (日本放射化学会), 桜上水 , 9 月 (2009).

14. 赤石義紀 :
"On the chiral SU(3) dynamics",
KEK 理論セミナー, ＫＥＫ、つくば市、２００９年６月

15. 大石 一城,Heffner R. H . ,髭本 亘,伊藤 孝,Bauer E. D . ,Graf M. J . ,Zhu J. - . ,Morales L. A . , Sarrao J. L . ,Morris G. D . ,Fluss M. J . ,MacLaughlin D. E . ,Shu L . :
"Muon spin rotation measurements of the superfluid density in fresh and aged superconducting $PuCoGa_5$",
Workshop "Issues on Magnetic Penetration Depth Measurements in Superconductors" ,(日本原子力研究開発機構), 東海村 , 4 月 (2009).

16. 中島 紗織,鈴木 栄男,渡邊 功雄,真中 浩貴,後藤 貴行,Alex A . :
"乱れを含んだ量子スピンラダーIPACu$(Cl_xBr_{1-x})_3$ の量子臨界点近傍におけるμSR II",
日本物理学会第 64 回年次大会 , 立教大学、立教池袋中学・高校 , 3--3 月 (2009).

17. 鈴木 栄男,川股 隆行,渡邊 功雄,後藤 貴行,山田 文子,田中 秀数:
"量子スピン系 $Tl_{1-x}K_xCuCl_3$ (x = 0.51, 0.60)におけるミュオンスピン緩和(μSR)とソフトモード",
日本物理学会第 64 回年次大会 , 東京 , 3--3 月 (2009).

18. 佐久間 史典:
"Nuclear astrophysics at J-PARC with a search for deeply-bound kaonic nuclear states",
2008 年度国立天文台研究集会「R プロセス元素組成の統合的理解：宇宙の中の不安定核物理 ,(筑波大学物理学系原子核実験グループ,国立天文台), つくば , 3 月 (2009).

19. 大石 一城,山田 幾也,幸田 章宏,門野 良典,Saha S. R . ,髭本 亘,小嶋 健児,東 正樹,高野 幹夫:
"頂点塩素を有する銅酸化物超伝導体 $Ca_{2-x}Na_xCuO_2Cl_2$ における磁場誘起磁性 II",
日本物理学会第 64 回年次大会 , (日本物理学会), 東京 , 3 月 (2009).

20. 川股 隆行,上坂 正憲,菅原 直樹,佐藤 光秀,金子 直人,小山 佳一,工藤 一貴,小林 典男,小池 洋二:
"比熱と磁化からみた $Pb_2V_3O_9$ 単結晶のボース・アインシュタイン凝縮相転移",
日本物理学会第 64 回年次大会 , 東京 , 3 月 (2009).

21. 小池 貴久,原田 融:
"結合チャンネル DWIA による ^{3}He(in-flight K^-,n) 反応計算 II",
日本物理学会第 64 回年次大会 , (日本物理学会), 東京 , 3 月 (2009).

22. 赤石義紀、大生光明、和田正信、山崎敏光,
"Λ(1405) はダブルポールか？",
日本物理学会第 64 回年次大会 ，（日本物理学会)， 東京 ， 3 月 (2009).

23. 大久保 晋, 日野 俊一, 藤澤 真士, 太田 仁, 川股 隆行, 小池 洋二:
"ボンド交替系 $Pb_2V_3O_9$ 単結晶試料の強磁場 ESR 測定",
日本物理学会第 64 回年次大会 ， 東京 ， 3 月 (2009).

24. 上坂 正憲, 川股 隆行, 金子 直人, 佐藤 光秀, 菅原 直樹, 工藤 一貴, 小林 典男, 小池 洋二:
"１次元量子スピン系 $Sr_2V_3O_9$ 単結晶のスピンによる熱伝導",
日本物理学会第 64 回年次大会 ， 東京 ， 3 月 (2009).

25. 板橋健太,
"核内中間子：実験",
特定領域研究「ストレンジネスで探るクォーク多体系」理論班主催 「ストレンジネスを含むクオーク多体系分野の理論的将来を考える」研究会，熱海 (2009)

2008

26. 佐久間 史典:
"J-PARC E15 実験における TGEM-TPC の開発@理研",
第 5 回「マイクロパターンガス検出器(MPGD)研究会」 ，（東大 CNS)， 和光 ， 12 月 (2008).

27. 大石 一城, 石井 康之, 渡邊 功雄, 齊藤 拓, 深澤 英人, 小堀 洋, 木方 邦宏, 李 哲虎, 宮沢 喜一, 伊豫 彰, 鴫谷 幸佑, 山田 和芳, 永崎 洋: "μSR から眺めた鉄ヒ素系超伝導体の常伝導状態及び超伝導状態の研究", JST-TRIP 新規材料による高温超伝導基盤技術 第 3 回領域会議,(独立行政法人 科学技術振興機構), 東京大学小柴ホール, 12 月 (2008).

28. 赤石義紀,
"**Structure of K^-pp system and super-strong nuclear force by migrating K^{bar} meson**",
法政大学セミナー、東京、２００８年１１月２０日

29. 板橋健太,
"Sepctroscopy of η mesic nuclei by (π, N) reaction in J-PARC",
科研費特定領域研究 「ストレンジネスで探るクォーク多体系」 2008 年研究会, 金沢 (2008)

30. 後藤 貴行,鈴木 栄男,真中 浩貴,金田 圭史,中島 紗織,大沢 明,渡邊 功雄:
"**乱れを含んだ量子スピンラダーIPA-Cu(Cl , Br)$_3$ の量子臨界近傍における SR**",
日本物理学会 2008 年秋季大会 , 岩手大学上田キャンパス , 9--9 月 (2008).

31. 飯尾 雅実, 板橋 健太, 岩崎 雅彦, 應田 治彦, 大西 宏明, 佐久間 史典, 佐藤 将春, 塚田 暁, 友野 大, 藤岡 宏之, 山崎 敏光, 石元 茂, 岩井 正明, 鈴木 祥二, 関本 美知子, 豊田 晃久, 石川 隆, 竜野 秀行, 鈴木 隆敏, 早野 龍五, 松田 恭幸, 永江 知文, 平岩 聡彦, 味村 周平, 野海 博之, 阪口 篤志, 藤原 裕也, 徳田 真, 千葉 順成, 福田 共和, 溝井 浩, Beer G. A. , 方 享燦, Choi S. , 林 熙重, 石渡 智一, Buehler P. , Cargnelli M. , Hirtl A. , Kienle P. , Marton J. , Widmann E. , Zmeskal J. , 岡田 信二, Curceanu C. O. , Guaraldo C. , Iliescu M. , Pietreanu D. , Sirghi D. , Sirghi F. , Faso D. , Morra O. , Busso L. :
"K 中間子原子核探査実験のための液体ヘリウム３標的の開発 III",
日本物理学会 2008 年秋季大会 , 山形大 ， 9--9 月 (2008).

32. 大西 宏明:
″反陽子ビームを用いたΦ中間子原子核探索実験″,
J-PARC ハドロン物理の将来研究計画を考える ， 埼玉県和光市 ， 9 月 (2008).

33. 赤石義紀 ：
“少数体ケイオン核の課題”，
J-PARC の物理：ハドロン・原子核研究の新しい局面，ＫＥＫ、つくば市、２００８年８月

34. 金田 圭史,大沢 明,後藤 貴行,鈴木 栄男,真中 浩貴:
″乱れを含んだ量子スピン磁性体 IPA-Cu$(Cl_{0.35}Br_{0.65})_3$の NMR″,
日本物理学会第 63 回年次大会 ， 近畿大学本部キャンパス ， 3--3 月 (2008).

35. 後藤 貴行,金田 圭史,齊藤 健浩,大沢 明,鈴木 栄男,渡邊 功雄:
″スピンラダー固溶系 IPA-Cu$(Cl_xBr_{1-x})_3$の Cl-rich 相(x ＞ 0.87)におけるμSR 及び ^{1}H-NMR″,
日本物理学会第 63 回年次大会 ， 近畿大学本部キャンパス ， 3--3 月 (2008).

36. 藤原 裕也,岩崎 雅彦,板橋 健太,應田 治彦,大西 宏明,岡田 信二,佐久間 史典:
″J-PARC E15 実験のための K 中間子崩壊事象 veto カウンターの開発″,
日本物理学会 ，(日本物理学会)， 近畿大学本部キャンパス ， 3 月 (2008).

37. 鈴木 隆敏,飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,大西 宏明,岡田 信二,佐藤 将春,友野 大,
松田 恭幸,山崎 敏光,福田 芳之,石川 隆,早野 龍五,石元 茂,岩井 正明,鈴木 祥仁,千葉 順成,
花木 俊生,Bhang H.,Choi S. ,Kim J. ,Yim H .,石渡 智一,Widmann E.,Kienle P .：
″^{4}He 上の静止 K-反応に於ける重陽子測定によるストレンジマルチバリオン状態の探索（１）″,
日本物理学会第６３回年次大会 ,(社団法人　日本物理学会)， 大阪府東大阪市　近畿大学 ，3 月 (2008).

38. 川股 隆行,金子 直人,上坂 正憲,工藤 一貴,小林 典男,小池 洋二:
″１次元量子スピン系 $SrCuO_2$, $Sr_2V_3O_9$ におけるスピンによる熱伝導″,
物性科学領域横断研究会「スピンが拓く物性科学の最前線」 ， 東京 ， 11--12 月 (2008).

39. 石田 勝彦:
″理研 RAL ミュオン施設の概要″,
RCNP 研究会「ミューオン科学と加速器研究」 ，(大阪大学)， 茨木 ， 10 月 (2008).

40. 小池 洋二,川股 隆行,高橋 伸雄,金子 直人,上坂 正憲,足立 匡,野地 尚,工藤 一貴,小林 典男:
″低次元量子スピン系物質におけるスピンによる熱伝導″,
日本熱物性学会第 10 回「マイクロナノスケールの熱物性とシステムデザイン」研究会 ， 東京 ， 9 月 (2008).

41. 小池 貴久,原田 融:
″結合チャンネル DWIA による ^{3}He(in-flight K^-,n) 反応計算″,
日本物理学会 2008 年秋季大会 ，(日本物理学会)， 山形 ， 9 月 (2008).

42. 金子 直人,川股 隆行,上坂 正憲,小池 洋二:
″1 次元量子スピン系 $SrCuO_2$ 単結晶におけるスピンによる熱伝導のアニール効果″,
日本物理学会 2008 年秋季大会 ， 盛岡 ， 9 月 (2008).

43. 上坂 正憲,川股 隆行,金子 直人,菅原 直樹,工藤 一貴,小林 典男,小池 洋二:
"1次元量子スピン系 $Sr_2V_3O_9$ 単結晶の育成とスピンによる熱伝導",
日本物理学会 2008 年秋季大会 , 盛岡 , 9 月 (2008).

44. 大石 一城,髭本 亘,Heffner R. H. ,Spehling J. ,MacDougall G. J. ,伊藤 孝,Amato A. , Andreica D. ,Nieuwenhuys G. ,Klauss H. H. ,Luke G. M. ,Thompson J. D. ,Bianchi A. D. , Fisk Z. :
"μSR から眺めた $CeCo(In,Cd)_5$ の磁性と超伝導",
日本物理学会 2008 年秋季大会 ,(日本物理学会), 盛岡 , 9 月 (2008).

45. 松本 琢磨,江上 智晃,緒方 一介,井芹 康統,八尋 正信,上村 正康:
"中性子過剰核の分解反応断面積の計算",
日本物理学会 2008 年秋季大会 , 盛岡 , 9 月 (2008).

46. 鈴木 栄男,渡邊 功雄,後藤 貴行,山田 文子,田中 秀数:
"量子スピン系 $Tl_{1-x}K_xCuCl_3$ (x = 0.20, 0.44, 0.58) におけるミュオンスピン緩和(μSR)測定",
日本物理学会 2008 年秋季大会 ,(日本物理学会), 盛岡 , 9 月 (2008).

47. 川股 隆行,金子 直人,上坂 正憲,工藤 一貴,小林 典男,小池 洋二:
"Sr_2CuO_3, $SrCuO_2$ におけるスピンによる巨大熱伝導",
第 69 回応用物理学会学術講演会 ,(応用物理学会), 春日井 , 9 月 (2008).

48. 川股 隆行,菅原 直樹,Haidar S. M. ,金子 直人,上坂 正憲,小山 佳一,工藤 一貴,小林 典男,小池 洋二:
"熱伝導, 比熱, 磁化からみた $Pb_2V_3O_9$ 単結晶におけるトリプロンのボース・アインシュタイン凝縮相転移"
文部科学省科学研究補助金特定領域研究「フラストレーションが創る新しい物性」第 2 回トピカルミーティング「フラストレーションとマルチフェロイクス」 ,(文部科学省科学研究費補助金特定領域研究「フラストレーションが創る新しい物性」), 宇治 , 6 月 (2008).

49. 川股 隆行,菅原 直樹,Haidar S. M. ,野地 尚,小池 洋二,工藤 一貴,小林 典男,藤井 裕,菊池 彦光, 千葉 明朗,Petrakovskii G. ,Popov M. ,Bezmaternikh L. :
"熱伝導からみた CuB_2O_4 の磁気秩序移",
日本物理学会第 63 回年次大会 ,(日本物理学会), 東大阪 , 3 月 (2008).

50. 菅原 直樹,川股 隆行,Haidar S. M. ,金子 直人,上坂 正憲,工藤 一貴,小林 典男,小池 洋二:
"1次元スピン-ダイマー系 $Pb_2V_3O_9$ におけるトリプロンのボーズ・アインシュタイン凝縮相転移",
日本物理学会第 63 回年次大会 ,(日本物理学会), 東大阪 , 3 月 (2008).

51. Haidar S. M. ,足立 匡,川股 隆行,菅原 直樹,佐藤 秀孝,田邉 洋一,野地 尚,工藤 一貴,小林 典男, 小池 洋二:
"$La_{2-x}Sr_xCuO_4$ のオーバードープ領域における磁場中熱伝導と 1/4 異常",
日本物理学会第 63 回年次大会 ,(日本物理学会), 東大阪 , 3 月 (2008).

52. 石田 勝彦,今尾 浩士,松田 恭幸,河村 成肇,豊田 晃久,岩崎 雅彦,永嶺 謙忠:
"負ミュオン移行率の温度依存性で見る固体トリチウム中の 3He の挙動",
日本物理学会第 63 回年次大会 , 東大阪 , 3 月 (2008).

53. 鈴木 栄男,山田 文子,渡邊 功雄,大沢 明,後藤 貴行,田中 秀数:
"Tl($Cu_{1-x}Mg_x$)Cl_3 (x = 0.0047) におけるμSR 法で見たスピン揺らぎ",
日本物理学会第 63 回年次大会 , (日本物理学会), 東大阪 , 3 月 (2008).

54. 香取 浩子,三浦 登,伊藤 厚子,Schoenhart M . ,Groessinger R . ,Kozlova N . ,Doerr K . :
"絶縁体混晶スピングラス $Fe_xMn_{1-x}TiO_3$ における磁化過程の特異な磁場掃引速度依存性",
日本物理学会第 63 回年次大会 , 東大阪 , 3 月 (2008).

55. 小池 貴久,原田 融:
"(K^-, N)反応における (Σπ)崩壊しきい値付近のカスプ的構造",
日本物理学会第 63 回年次大会 , 東大阪 , 3 月 (2008).

56. Strasser P . :
"不安定核によるミュオニック原子生成研究",
日本原子力研究開発機構先端基礎研究センターセミナー , 東海村 , 1 月 (2008).

2007

57. 赤石義紀:
"Kaonic nuclei as decaying state",
北海道大学セミナー、札幌、２００７年１２月

58. 石田 勝彦:
"ミュオン触媒核融合における凝集系水素の効果",
北大低温研共同利用研究集会「低温凝集系における水素の化学と物性」 , (北大低温研), 札幌 , 12 月 (2007).

59. Strasser P . :
"Radioactive muonic atom studies with stopped RI beams",
第 4 回「停止・低速不安定核を用いた核分光研究」研究会 , (東北大学, 理研仁科加速器研究センター, 高エネルギー加速器研究機構), 仙台 , 12 月 (2007).

60. 岡田 信二,Beer G. A . ,方 享燦,Buehler P . ,Cargnelli M . ,千葉 順成,Choi S . ,Curceanu C. O . , 福田 芳之,Guaraldo C . ,花木 俊生,早野 龍五,Hirtl A . ,飯尾 雅実,Iliescu M . ,石川 隆,石元 茂, 石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,Kienle P . ,Marton J . ,松田 恭幸,大西 宏明, 應田 治彦,Pietreanu D . ,Sirghi D . ,Sirghi F . ,佐藤 将春,鈴木 隆敏,竜野 秀行,友野 大, Widmann E . ,山崎 敏光,林 熙重,Zmeskal J . :
"J-PARC における K 中間子ヘリウム３原子 X 線分光実験 J-PARC　E17 の現状",
文部科学省科学研究費補助金特定領域研究特定領域研究「ストレンジネスで探るクォーク多体系」第 3 回総括班主催研究会 (2007) , 宮城県仙台市 , 12 月 (2007).

61. 飯尾 雅実,味村 周平,Beer G．,Bhang H．,Buehler P．,Busso L．,Cargnelli M．,千葉 順成,
Choi S．,Curceanu C．,Faso D．,藤岡 宏之,福田 共和,福田 芳之,Guaraldo C．,花木 俊夫,
早野 龍吾,Hirtl A．,Iliescu M．,石川 隆,石元 茂,石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,
Kienle P．,Marton J．,松田 恭幸,溝井 浩,Morra O．,永江 知文,岡田 信二,大西 宏明,
應田 治彦,Pietreanu D．,阪口 篤志,佐久間 史典,佐藤 将春,関本 美知子,Sirghi D．,Sirghi F．,
鈴木 祥二,鈴木 隆敏,竜野 秀行,友野 大,豊田 晃久,Widmann E．,山崎 敏光,Yim H．,Zmeskal J．：
"K 中間子原子・原子核実験のための液体ヘリウム 3 標的の開発",
文部科学省科学研究費補助金特定領域研究特定領域研究「ストレンジネスで探るクォーク多体系」第 3 回総括班主催研究会 (2007), 仙台 , 11 月 (2007).

62. 鈴木 隆敏,Bhang H.,千葉 順成,Choi S.,福田 芳之,花木 俊生,早野 龍五,飯尾 雅実,石川 隆,石元 茂,
石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,Kienle P．,Kim J. H．,松田 恭幸,岡田 信二,大西 宏明,
應田 治彦,佐藤 将春,鈴木 祥二,友野 大,Widmann E．,山崎 敏光,林 熙重:
"Λ-核子相関によるストレンジマルチバリオン状態の探索",
文部科学省科学研究費補助金特定領域研究特定領域研究「ストレンジネスで探るクォーク多体系」第 3 回総括班主催研究会 (2007), 仙台 , 11 月 (2007).

63. 大西 宏明:
"Φ中間子原子核探索実験",
J-PARC ハドロン実験施設のビームライン設備拡充に向けて, (大阪大学核物理研究センター),大阪大学核物理研究センター,11 月(2007).

64. 板橋健太,
"核内ハドロン分光実験",
RCNP WORKSHOP on Towards Upgrade of the J-PARC Hadron Experimental Facility, RCNP, 大阪 (2007)

65. 小林 義男:
"不安定核で見る化学反応と原子の振る舞い",
東京工業大学大学院理工学研究科理学研究流動機構シンポジウム「元素の個性〜どう見るか、どうつくるか、どう使うか〜」, (東京工業大大学院理工学研究科理学研究流動機構), 東京 , 11 月 (2007).

66. 石田 勝彦:
"ミュオン触媒核融合研究の現状と展望",
物構研セミナー , (高エネルギー加速器研究機構), つくば , 10 月 (2007).

67. 和田正信、赤石義紀、大生光明:
"$K_{N\text{-}3/2}$形状因子と $K^{bar}N$ 相互作用",
日本物理学会第 62 回年次大会 , 札幌 , 9 月 (2007).

68. 小池 貴久,原田 融:
"軽い標的核における(K^-,N)反応スペクトルの DWIA 計算",
日本物理学会第 62 回年次大会 , 札幌 , 9 月 (2007).

69. 飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,大西 宏明,岡田 信二,佐久間 史典,佐藤 将春,鈴木 隆敏,友野 大,松田 恭幸,山崎 敏光,石元 茂,岩井 正明,鈴木 祥二,関本 美知子,豊田 晃久,永江 知文,石川 隆,竜野 秀行,早野 龍吾,藤岡 宏之,味村 周平,阪口 篤志,福田 芳之,千葉 順成,花木 俊夫,福田 共和,溝井 浩,Beer G．,Bhang H．,Choi S．,Yim H．,石渡 智一,Buehler P．,Cargnelli M．,Hirtl A．,Kienle P．,Marton J．,Widmann E．,Zmeskal J．,Curceanu C．,Guaraldo C．,Iliescu M．,Pietreanu D．,Sirghi D．,Sirghi F．,Faso D．,Busso L．,Morra O．：
"K 中間子原子核探査実験のための液体ヘリウム標的の開発 II",
日本物理学会第 62 回年次大会 ， 札幌 ， 9 月 (2007).

70. 佐久間 史典:
"J-PARC における K 中間子原子核探索実験のための円筒形ドリフト・チェンバーの開発(J-PARC E15 実験)",
日本物理学会第 62 回年次大会 ， 札幌 ， 9 月 (2007).

71. 石田 勝彦,松崎 禎市郎,松田 恭幸,岩崎 雅彦,今尾 浩士,河村 成肇,永嶺 謙忠:
"オルソ・パラ重水素を用いた非平衡状態 D_2/T_2 中のミュオン触媒核融合",
日本物理学会第 62 回年次大会 ， 札幌 ， 9 月 (2007).

72. 松本 琢磨,上村 正康,江上 智晃,井芹 康統,緒方 一介,八尋 正信:
"離散化チャネル結合法による 6He, 6Li 分解反応解析",
日本物理学会第 62 回年次大会 ， 札幌 ， 9 月 (2007).

73. 鈴木 隆敏,Bhang H．,千葉 順成,Choi S．,福田 芳之,花木 俊生,早野 龍五,飯尾 雅実,石川 隆,石元 茂,石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,Kienle P．,Kim J. H．,松田 恭幸,岡田 信二,大西 宏明,應田 治彦,佐藤 将春,鈴木 祥二,友野 大,Widmann E．,山崎 敏光,林 熙重:
"^{4}He 上の静止 $K^-$$反応に於けるハイパロン-核子相関によるストレンジマルチバリオン状態の探索",
日本物理学会第 62 回年次大会 ， 札幌 ， 9 月 (2007).

74. 後藤 貴行,金田 圭史,齊藤 健浩,大沢 明,鈴木 栄男,渡邊 功雄,真中 浩貴:
"乱れを含んだ量子スピン磁性体 IPA-Cu$(Cl_{0.35}Br_{0.65})_3$ のμSR",
日本物理学会第 62 回年次大会 ， 北海道大学札幌キャンパス ， 9--9 月 (2007).

75. 大沢 明,齊藤 健浩,佐々木 孝彦,鈴木 栄男,後藤 貴行,淡路 智,渡辺 和雄,小林 典男:
"強磁場トルク測定によるスピンギャップ磁性体 $IPACuCl_3$ の磁場誘起相転移",
日本物理学会第 62 回年次大会 ， 北海道大学札幌キャンパス ， 9--9 月 (2007).

76. 岡田 信二,Beer G. A．,方 享燦,Cargnelli M．,千葉 順成,Choi S．,Curceanu C. O．,福田 芳之,花木 俊生,早野 龍五,飯尾 雅実,石川 隆,石元 茂,石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,Juhasz B．,Kienle P．,Marton J．,松田 恭幸,大西 宏明,應田 治彦,Schmid P．,佐藤 将春,鈴木 祥仁, 鈴木 隆敏,竜野 秀行,友野 大,Widmann E．,山崎 敏光,林 熙重,Zmeskal J．：
“K 中間子ヘリウム４原子 X 線の精密測定 (V) ”
日本物理学会 2007 年秋季大会 ， 札幌 ， 9 月 (2007).

77. 赤石義紀 ：
“北大から核研、KEK へ　― 研究の歩み ―”,
北大関係者の集い　― 北大核理論の５０年と今後にむけて ―, 北海道大学、札幌、２００７年９月

78. 赤石義紀 ：
“ハイパー核・中性子過剰核・ケイオン核を繋ぐ一つのエキゾティクス”,
RIBF ミニワークショップ「不安定核・ストレンジハドロン原子核の合同理論研究会 — 軽いエキゾチック系の構造を中心として —」理研, 和光市, ２００７年７月

79. 鈴木 隆敏,Bhang H．,千葉 順成,Choi S．,福田 芳之,花木 俊生,早野 龍五,飯尾 雅実,石川 隆,石元 茂,石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,Kienle P．,Kim J. H．,松田 恭幸,岡田 信二,大西 宏明,應田 治彦,佐藤 将春,鈴木 祥二,友野 大,Widmann E．,山崎 敏光,林 熙重:
″^{4}He(stopped K^{-},N) 反応によるストレンジマルチバリオン状態の探索″,
中間子束縛系研究会議 2007 , 和光 , 6 月 (2007).

80. 赤石義紀 ：
“Structure of the basic kaon nuclear cluster K^{-}pp”,
RIBF ミニワークショップ「中間子束縛系研究会議」理研, 和光市, ２００７年６月

81. 板橋健太,
″Recoilless meson bound state production experiments″,
RIBF ミニワークショップ「中間子束縛系研究会議」理研, 和光市, ２００７年６月

82. 齊藤 健浩,金田 圭史,足立 知彌,大沢 明,後藤 貴行,鈴木 栄男,渡邊 功雄:
″量子スピン系 IPA-Cu(Cl_xBr_{1-x})$_3$の異常量子臨界″,
日本物理学会 2007 年春季大会 , 鹿児島大学郡元キャンパス , 3--3 月 (2007).

83. 遠西 淳,上田 真德,鈴木 栄男,後藤 貴行,大沢 明,藤田 全基,山田 和芳,足立 匡,小池 洋二:
″NMR でみたランタン系高温超伝導体におけるインコヒーレント構造″,
日本物理学会 2007 年春季大会 , 鹿児島大学郡元キャンパス , 3--3 月 (2007).

84. 大西 宏明: 飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,岡田 信二,佐久間 史典,鈴木 隆敏,友野 大,松田 恭幸,山崎 敏光,石元 茂,鈴木 祥二,関本 美知子,豊田 晃久,永江 知文,石川 隆,竜野 秀行,早野 龍五,藤岡 宏之,味村 周平,阪口 篤志,佐藤 将春,福田 芳之,千葉 順成,花木 俊生,福田 共和,溝井 浩,Beer G. A．,方 享燦,Choi S．,林 熙重,石渡 智一,Buehler P．,Hirtl A．,Cargnelli M．,Kienle P．,Marton J．,Widmann E．,Zmeskal J．,Curceanu C. O．,Guaraldo C．,Iliescu M．,Pietreanu D．,Sirghi D．,Sirghi F．,Faso D．,Busso L．,Morra O．
“J-PARC における 3He(K-in-flight,n) 反応を用いた K 中間子原子核探索実験計画”
日本物理学会 , (社団法人　日本物理学会), 東京都八王子市南大沢１－１ , 3 月 (2007).

85. 飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,大西 宏明,岡田 信二,佐久間 史典,鈴木 隆敏,友野 大,松田 恭幸,山崎 敏光,石元 茂,鈴木 祥二,関本 美知子,豊田 晃久,永江 知文,石川 隆,竜野 秀行,早野 龍五,藤岡 宏之,味村 周平,阪口 篤志,佐藤 将春,福田 芳之,千葉 順成,花木 俊生,福田 共和,溝井 浩,Beer G. A．,方 享燦,Choi S．,林 熙重,石渡 智一,Buehler P．,Hirtl A．,Cargnelli M．,Kienle P．,Marton J．,Widmann E．,Zmeskal J．,Curceanu C. O．,Guaraldo C．,Iliescu M．,Pietreanu D．,Sirghi D．,Sirghi F．,Faso D．,Busso L．,Morra O．：
″K 中間子原子核探査実験のための液体ヘリウム３標的の開発″,
日本物理学会 2007 年春季大会 , 首都大 , 3--3 月 (2007).

86. 大西 宏明:
"Dilepton measurement at CERN/SPS",
日本物理学会 , (社団法人 日本物理学会), 東京都八王子市南大沢１－１ , 3 月 (2007).

87. 佐藤 将春,飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,大西 宏明,岡田 信二,鈴木 隆敏,友野 大,松田 恭幸,山崎 敏光,福田 芳之,石川 隆,早野 龍五,石元 茂,岩井 正明,鈴木 祥仁,千葉 順成,花木 俊生,Bhang H.,Choi S.,Kim J .,Yim H . ,石渡 智一,Widmann E.,Kienle P.:
"^{4}He($K^{-}_{stopped}$,N)反応を用いたストレンジトライバリオンの実験的研究（６）",
日本物理学会第 63 回年次大会 , (社団法人 日本物理学会), 東京都八王子市南大沢１－１ , 3 月 (2007).

88. 亀田 大輔,上野 秀樹,旭 耕一郎,竹村 真,吉見 彰洋,長谷山 智仁,内田 誠,島田 健司,長江 大輔,木島 剛,新井 崇雅,高瀬 研以智,須田 紳一,井上 壮志,村田 次郎,川村 広和,小林 義男,渡邉 寛,石原 正泰:
"中性子過剰核 ^{32}Al の核モーメント測定--魔法数 20 の閉殻構造の破れに関連して--",
日本物理学会 2007 年春季大会 , 東京 , 3 月 (2007).

89. 小池 貴久,原田 融:
"^{3}He 標的を用いた(in-flight K^{-},n)反応の DWIA 計算 II",
日本物理学会 2007 年春季大会 , 八王子 , 3 月 (2007).

90. 山崎敏光, 赤石義紀 :
"ケイオン核 K^{-}pp の生成",
日本物理学会 2007 年春季大会 , 八王子 , 3 月 (2007).

91. 赤石義紀, 山崎敏光, :
"ケイオン核 K^{-}pp の構造",
日本物理学会 2007 年春季大会 , 八王子 , 3 月 (2007).

92. 新村昌治、和田正信、赤石義紀、大生光明 :
"ガウス形ソースをもつメソン・バリオン間ポテンシャルの研究",
日本物理学会 2007 年春季大会 , 八王子 , 3 月 (2007).

93. 坂井 賢一,伊藤 嘉規,今久保 達郎,芥川 智行,中村 貴義,市川 結,谷口 彬雄:
"配位子内に水素結合をもつ亜鉛(II)錯体の構造と発光特性",
日本化学会第 87 春季年会 , (日本化学会), 吹田 , 3 月 (2007).

94. 板橋健太 KEK-PS E570 実験グループ,
"Ｋ核に関連した動機によるＫ中間子ヘリウム原子Ｘ線分光実験の現状",
ストレンジネスとエキゾチクス理論の課題研究会, 鳥羽 (2007)

95. 松本 琢磨,江上 智晃,緒方 一介,井芹 康統,八尋 正信,上村 正康:
"不安定核分解反応による di-neutron 相関の研究",
RCNP 研究会「核子多体系におけるクラスター現象」 , (大阪大学核物理研究センター), 大阪 , 2 月 (2007).

2006

96. 飯尾 雅実,石元 茂:
"K 中間子原子核探査実験のための液体ヘリウム３標的",
文科省科研費補助金特定領域研究「ストレンジネスで探るクォーク多体系」研究会 2006 ,
熱海 , 12--12 月 (2006).

97. 岡田 信二,Beer G. A . ,方 享燦,Buehler P . ,Cargnelli M . ,千葉 順成,Choi S . ,Curceanu C. O . ,
福田 芳之,Guaraldo C . ,花木 俊生,早野 龍五,Hirtl A . ,飯尾 雅実,Iliescu M . ,石川 隆,石元 茂,
石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,Kienle P . ,Marton J . ,松田 恭幸,大西 宏明,
應田 治彦,Pietreanu D . ,Sirghi D . ,Sirghi F . ,佐藤 将春,鈴木 隆敏,竜野 秀行,友野 大,
Widmann E . ,山崎 敏光,林 熙重,Zmeskal J . :
"Precision spectroscopy of Kaonic Helium-3 3d→2p X-rays (J-PARC E17 実験) ",
文科省科研費補助金特定領域研究「ストレンジネスで探るクォーク多体系」研究会 2006 , 静岡県熱海市 ,
12 月 (2006).

98. 川股 隆行,宮島 祐一,高橋 伸雄,野地 尚,小池 洋二,工藤 一貴,小林 典男:
"５本足スピン梯子格子系 $La_8Cu_7O_{19}$ とハルデンギャップ系 Y_2BaNiO_5 におけるスピンによる熱伝導",
東大物性研短期研究会「量子スピン系の物理」 , 柏 , 11 月 (2006).

99. 川股 隆行,宮島 祐一,高橋 伸雄,野地 尚,小池 洋二,工藤 一貴,小林 典男:
"５本足スピン梯子格子系 $La_8Cu_7O_{19}$ とハルデンギャップ系 Y_2BaNiO_5 におけるスピンによる熱伝導",
ボトムアップ若手の会第 1 回研究会：物理・化学・生物の融合を目指して , 和光 , 11 月 (2006).

100. 蜂谷 健一:
"充填スクッテルダイト ^{31}P-NMR/μSR",
ボトムアップ若手の会第 1 回研究会：物理・化学・生物の融合を目指して , 和光 , 11 月 (2006).

101. 石田 勝彦:
"理研 RAL ミュオン施設での研究の現状",
仁科加速器研究センター原子核グループ月例コロキウム , 和光 , 10 月 (2006).

102. 齊藤 健浩,金田 圭史,大沢 明,後藤 貴行,鈴木 栄男,田中 秀数:
"量子スピン系 $IPACu(Cl_xBr_{1-x})_3$ のμSR",
日本物理学会 2006 年秋季大会 , 千葉大学西千葉キャンパス , 9--9 月 (2006).

103. 松本 琢磨,緒方 一介,江上 智晃,井芹 康統,八尋 正信,上村 正康:
"^{6}H 核力・クーロン分解反応の解析",
日本物理学会 2006 年秋季大会 , 奈良 , 9--9 月 (2006).

104. 岩崎 雅彦:
"KpX から K 核へ",
日本物理学会 2006 年秋季大会 , (日本物理学会), 奈良 , 9 月 (2006).

105. 小池 貴久,原田 融:
"^{3}He 標的を用いた(in-flight K^-, n)反応の DWIA 計算",
日本物理学会 2006 年秋季大会 , (日本物理学会), 奈良 , 9 月 (2006).

106. 板橋健太,
″シリコンドリフト検出器とフラッシュ ADC を用いた K 中間子ヘリウム原子 X 線測定システム″,
日本物理学会, 奈良(2006)

107. 大平-河村 聖子,齋藤 麻優美,宮坂 等:
″μSR 法でみた Mn^{III}_2-Ni^{II} 型単一次元鎖磁石のスピンダイナミクス″,
日本物理学会 2006 年秋季大会 , 千葉 , 9 月 (2006).

108. 吉川 明子,勝又 紘一,本多 善太郎,渡邊 功雄,鈴木 栄男,松崎 禎市郎:
″スピンラダー物質 Na_2Co_2 $(C_2O_4)_3(H_2O)_2$ のμSR 測定″,
日本物理学会 2006 年秋季大会 , 千葉 , 9 月 (2006).

109. 齊藤 健浩,遠西 淳,大沢 明,後藤 貴行,鈴木 栄男,佐々木 孝彦,小林 典男,淡路 智,渡辺 和雄:
″複合ハルデン鎖 IPA-$CuCl_3$ の磁気格子相関″,
日本物理学会 2006 年秋季大会 , 千葉大学西千葉キャンパス , 9--9 月 (2006).

110. 遠西 淳,上田 真徳,鈴木 栄男,後藤 貴行,大沢 明,藤田 全基,山田 和芳,足立 匡,小池 洋二:
″$La_{2-x}Sr_xCuO_4$ のストライプ相における局所構造の磁場効果″,
日本物理学会 2006 年秋季大会 , 千葉大学西千葉キャンパス , 9--9 月 (2006).

111. 佐藤 将春,飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,大西 宏明,岡田 信二,鈴木 隆敏,友野 大,松田 恭幸,山崎 敏光,福田 芳之,石川 隆,早野 龍五,石元 茂,岩井 正明,鈴木 祥仁,千葉 順成,花木 俊生,Bhang H . ,Choi S . ,Kim J . ,Yim H . ,石渡 智一,Widmann E . ,Kienle P . :
″^{4}He($K^-_{stopped}$,N)反応を用いたストレンジトライバリオンの実験的研究 (4) ″,
日本物理学会第 62 回年次大会 , (社団法人　日本物理学会), 奈良女子大学 , 9 月 (2006).

112. 赤石義紀 :
“Deeply bound kaonic nuclear states in reply to recent criticisms”,
ＫＥＫ研究会、つくば市、２００６年８月

113. 赤石義紀 :
“ハイパー核研究のおもしろさ”,
ＫＥＫ理論セミナー、つくば市、２００６年７月

114. 赤石義紀 :
“Deeply bound kaonic nuclear states in reply to recent criticisms”,
東京工業大学セミナー、東京、２００６年６月

115. 赤石義紀 :
“Deeply bound kaonic nuclear states in reply to recent criticisms”,
ＫＥＫ理論セミナー、つくば市、２００６年６月

116. 赤石義紀 :
“Deeply bound kaonic nuclear states in reply to recent criticisms”,
上智大学理工学部コロキウム、東京、２００６年５月

117. 赤石義紀 :
“原子核の多様性”,
RIKEN Lecture Series, RIKEN, Wako-shi, ２００６年６月

118. 遠西 淳,上田 真徳,鈴木 栄男,後藤 貴行,大沢 明,藤田 全基,山田 和芳,足立 匡,小池 洋二:
"La 系高温超伝導体における局所構造",
日本物理学会第 61 回年次大会 , 愛媛大学城北キャンパス , 3--3 月 (2006).

119. 飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,大西 宏明,岡田 信二,鈴木 隆敏,友野 大,松田 恭幸,
山崎 敏光,石川 隆,竜野 秀行,早野 龍五,石元 茂,鈴木 祥二,佐藤 将春,福田 芳之,千葉 順成,
花木 俊生,方 享燦,Choi S . ,林 熙重,石渡 智一,Cargnelli M . ,Juhasz B . ,Kienle P . ,
Marton J . ,Widmann E . ,Zmeskal J . ,Schmid P . ,Beer G. A . ,Curceanu C. O . :
"K 中間子ヘリウム原子 X 線測定実験のための検出器系 I",
日本物理学会第 61 回年次大会 , 愛媛大/松山大 , 3--3 月 (2006).

120. 岡田 信二,Beer G. A . ,方 享燦,Cargnelli M . ,千葉 順成,Choi S . ,Curceanu C. O . ,福田 芳之,
花木 俊生,早野 龍五,飯尾 雅実,石川 隆,石元 茂,石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,
Juhasz B . ,Kienle P . ,Marton J . ,松田 恭幸,大西 宏明,應田 治彦,Schmid P . ,佐藤 将春,
鈴木 祥仁,鈴木 隆敏,竜野 秀行,友野 大,Widmann E . ,山崎 敏光,林 熙重,Zmeskal J . :
“J-PARC における K 中間子ヘリウム原子３ｄ→２ｐX 線精密測定の計画”
日本物理学会第 61 回年次大会 , 愛媛 , 3 月 (2006).

121. 佐藤 将春,飯尾 雅実,板橋 健太,岩崎 雅彦,應田 治彦,大西 宏明,岡田 信二,鈴木 隆敏,友野 大,
松田 恭幸,山崎 敏光,福田 芳之,石川 隆,早野 龍五,石元 茂,岩井 正明,鈴木 祥仁,千葉 順成,
花木 俊生,Bhang H . ,Choi S . ,Kim J . ,Yim H . ,石渡 智一,Widmann E . ,Kienle P . :
"^{4}He($K^{-}_{stopped}$,N)反応を用いたストレンジトライバリオンの実験的研究 (1) ",
日本物理学会第 61 回年次大会 , (社団法人　日本物理学会), 愛媛大学 , 3 月 (2006).

122. 赤石 義紀,山崎 敏光:
"ケイオン核－批判に答えて",
日本物理学会第 61 回年次大会 , 松山 , 3 月 (2006).

123. 山崎敏光、赤石義紀:
“Dominance of Λ*p sticking for the formation of dense Kbar nuclear clusters in NN collision”,
日本物理学会第 61 回年次大会 , 松山 , 3 月 (2006).

124. 大平-河村 聖子,前川 覚,鍛治 亮佑,伊藤 哲明:
"量子スピンカゴメ格子磁性体 Cu-titmb のμSR 測定",
日本物理学会第 61 回年次大会 , 松山 , 3 月 (2006).

125. 鈴木 栄男,渡邊 功雄,藤原 崇雄,大沢 明,後藤 貴行,山田 文子,田中 秀数:
"量子スピン系 $Tl_{1-x}K_{x}CuCl_{3}$ (x = 0.2) におけるμSR 測定",
日本物理学会第 61 回年次大会 , 松山 , 3 月 (2006).

126. 小池 貴久:
"Ξ^{-12}C 原子のカスケード計算",
日本物理学会第 61 回年次大会 , 松山 , 3 月 (2006).

127. 谷口 貴士:
"$CaRuO_3$ の ^{99}Ru メスバウアー分光とμSR",
理研シンポジウム第 10 回「理研加速器を用いた物性材料・原子物理・核物性・生物医学の研究」（非核加速器シンポジウム）, 和光, 2 月 (2006).

128. 松崎 禎市郎:
"Introduction to Muon Science at RIKEN-RAL Muon Facility",
第 62 回 NML セミナー ,（物質・材料研究機構), つくば , 2 月 (2006).

129. 川股 隆行,菅原 直樹,Haidar S. M . ,高橋 伸雄,宮島 祐一,野地 尚,小池 洋二,工藤 一貴,小林 典男,藤井 裕,菊池 彦光,千葉 明朗,Petrakovskii G . ,Popov M . ,Bezmaternikh L . :
"$La_8Cu_7O_{19}$、Y_2BaNiO_5、CuB_2O_4 におけるスピン状態と熱伝導",
文部科学省科学研究費補助金特定領域研究「異常量子物質の創製:新しい物理を生む新物質」成果報告会 , 仙台 , 1 月 (2006).

130. 赤石義紀 :
"ケイオン核をめぐる論争と展望",
日本大学理工学部コロキウム、船橋、２００６年１月

131. 板橋健太,
"π 中間子原子分光実験の展開",
RIBF 一次ビームの物理研究会, 理研 (2006)

132. 板橋健太,
"K 束縛核研究のための検出器とデータ収集系",
J-PARC DAQ WG (2005)

2005

133. 根村 英克:
"$_{\Lambda}^{5}He$ anomaly and tensor ΛN-ΣN coupling",
京都大学基礎物理学研究所研究会「弱結合系の束縛機構と新しいダイナミクス」 ,(京都大学基礎物理研究所), 京都 , 12 月 (2005).

134. 根村 英克,仲本 朝基:
"クォーク模型による Λ(1405)の研究",
文部科学省科学研究費補助金特定領域研究「ストレンジネスで探るクォーク多体系」研究会 , 伊東 , 11 月 (2005).

135. 松崎 禎市郎:
"理研－RAL ミュオン施設での多重極限条件下μSR 法による分子性物質の磁性研究",
理研シンポジウム「モレキュラー・アンサンブル 2005」 , 和光 , 11 月 (2005).

136. 松崎 禎市郎,石田 勝彦,河村 成肇,今尾 浩士,松田 恭幸,岩崎 雅彦,永嶺 謙忠,中村 哲,加藤 岑生,須貝 宏行,瓜谷 章,原野 英樹,Eaton G. H . :
"トリチウム固体中の蓄積 ^3He への負ミュオン移行率の温度依存性",
東京大学物性研究所短期研究会「固体における水素の科学」 ,（東京大学物性研究所), 柏市 , 11 月 (2005).

137. 赤石義紀 ：
“テンソル力による核構造の多様性”，
研究会「テンソル力と多核子相関」、基礎物理学研究所、京都、２００５年９月

138. 松崎 禎市郎:
"ミュオン物性研究へのお誘い",
日本物理学会北海道支部講演会 , (室蘭工業大学), 室蘭 , 9 月 (2005).

139. 大平 聖子,加藤 礼三,田嶋 尚也,開 康一,高橋 利宏:
"μSR 法でみたκ-$(BEDT)_2I_3$の磁性",
日本物理学会 2005 年秋季大会 , 京田辺 , 9 月 (2005).

140. 後藤 貴行,知久 宏之,浦野 萌美,鈴木 栄男,佐々木 孝彦,小林 典男,淡路 智,渡辺 和雄:
"有機超伝導体κ-$(BEDT\text{-}TTF)_2Cu(NCS)_2$における格子の量子融解",
日本物理学会 2005 年秋季大会 , 同志社大学田辺キャンパス , 9--9 月 (2005).

141. 藤原 崇雄,角田 玲子,大沢 明,後藤 貴行,神藤 陽介,田中 秀数,鈴木 栄男:
"ボースグラス相を示す乱れを含んだ量子スピン磁性体の NMR III",
日本物理学会 2005 年秋季大会 , 同志社大学田辺キャンパス , 9--9 月 (2005).

142. 井上 紘亨,黒江 晴彦,鈴木 栄男,大沢 明,後藤 貴行,関根 智幸,佐々木 孝彦,小林 典男,淡路 智,
渡辺 和雄:
"F-AF 交替鎖系$(CH_3)CHNH_3CuCl_3$の Cl-NMR",
日本物理学会 2005 年秋季大会 , 同志社大学田辺キャンパス , 9--9 月 (2005).

143. 佐藤 渉,上野 秀樹,大久保 嘉高,谷口 秋洋,齋宮 芳紀,笠松 良崇,谷垣 実,旭 耕一郎,篠原 厚:
"高配向熱分解グラファイト中の^{140}Ceの核四極緩和",
2005 日本放射化学会年会・第 49 回放射化学討論会 , 金沢 , 9 月 (2005).

144. 蜂谷 健一:
"充填スクッテルダイト化合物 $SmRu_4P_{12}$のμSR “,
日本物理学会 2005 年秋季大会 , 京都 , 9 月 (2005).

145. 石田 勝彦:
"ミュオン触媒核融合とミュオン原子 X 線の応用",
ミューオン科学ミニシンポ：新たなミューオン科学応用展開をめざして , (理研), 播磨 , 6 月 (2005).

146. 石田 勝彦:
"Muon catalyzed fusion",
第 5 回研究会「ニュートリノファクトリーとスーパービーム」(NuFact-J 05) , (東京工業大学), 東京 ,
6 月 (2005).

147. 赤石義紀 ：
“ケイオン核の発見”，
日本大学理工学部コロキウム、船橋、２００５年６月

148. 岡田 信二,Beer G. A . ,方 享燦,Cargnelli M . ,千葉 順成,Choi S . ,Curceanu C. O . ,福田 芳之,花木 俊生,早野 龍五,飯尾 雅実,石川 隆,石元 茂,石渡 智一,板橋 健太,岩井 正明,岩崎 雅彦,Juhasz B . ,Kienle P . ,Marton J . ,松田 恭幸,大西 宏明,應田 治彦,Schmid P . ,佐藤 将春,鈴木 祥仁,鈴木 隆敏,竜野 秀行,友野 大,Widmann E . ,山崎 敏光,林 熙重,Zmeskal J . ：
"中高エネルギー原子核実験における X 線検出器 SDD の開発"
理研ワークショップ「放射線検出器と電子回路の課題と展望-光子検出器を中心に」 , 和光市 , 5 月 (2005).

149. 赤石義紀 ：
"Strangeness Physics",
中井浩二先生退職記念研究会、ホテルパシフィック東京、品川、２００５年４月

150. 大平 聖子,藤田 渉,阿波賀 邦夫:
"有機ラジカル強磁性体 BBDTA·$GaCl_4$ のμSR 測定",
日本物理学会第 60 回年次大会 , 野田 , 3 月 (2005).

151. 赤石 義紀,土手 明伸,山崎 敏光:
"ストレンジ・トライバリオンの構造と生成",
日本物理学会第 60 回年次大会 , 野田 , 3 月 (2005).

152. 赤石義紀 ：
"ATMS and Strange Nuclear Physics",
北海道核理第１８回地域スクール、滝野、２００５年２月

153. 石田 勝彦:
"Provision for J-PARC muon: μCF research program",
第 3 回 J-PARC ミュオン科学実験施設委員会(MuSAC) , (JAERI, KEK), つくば , 2 月 (2005).

154. 石田 勝彦:
"ミュオン触媒 D-T 核融合の現状と課題について",
高温高圧トリチウム取扱及びトリチウムリサイクルに関する研究報告会 , (JAERI), 茨城県東海村 , 2 月 (2005).

155. 赤石義紀 ：
"Strange Nuclei as Deeply Bound Kbar States",
理研ＱＣＤ勉強会、理研、２００５年１月

2004

156. 松崎 禎市郎:
″ミュオン触媒 t-t 核融合とその関連する問題″,
「少数粒子系物理の最近の発展と今後の展望」研究会 , (RCNP), 茨木 , 12 月 (2004).

157. 板橋健太,
″パイ中間子原子分光実験の最近の発展と今後の展望″,
少数多体系の物理, RCNP (2004)

158. 赤石義紀 :
“深束縛ケイオン核の物理”,
研究会「バリオン力とバリオン物質」、盛岡、２００４年１１月

159. 赤石義紀 :
“Strange nuclei as deeply bound Kbar states”,
国際高等研究所、京阪奈、２００４年１１月

160. 小池 貴久:
″K 中間子窒素原子のカスケード中における電子遮蔽効果″,
日本物理学会 2004 年秋季大会 , 青森, 高知 , 9 月 (2004).

161. 赤石義紀 :
“エキゾチックな少数系の物理”,
日本物理学会秋分科会、高知大、高知、２００４年９月

162. 大平-河村 聖子,清水 康弘,鹿野田 一司,斎藤 軍治:
″μSR 法でみた 2 次元三角格子反強磁性体κ-$(ET)_2Cu_2(CN)_3$の磁性″,
日本物理学会 2004 年秋季大会 , 青森, 高知 , 9 月 (2004).

163. 今尾 浩士,永嶺 謙忠,松崎 禎市郎,石田 勝彦,河村 成肇,松田 恭幸,豊田 晃久,加藤 岑生,須貝 宏行,瓜谷 章,原野 英樹:
″DD 系ミュオン触媒核融合の凝縮系オルソパラ効果″,
日本物理学会 2004 年秋季大会 , 青森, 高知 , 9 月 (2004).

164. 石田 勝彦,永嶺 謙忠,松崎 禎市郎,河村 成肇,松田 恭幸,岩崎 雅彦,今尾 浩士,加藤 岑生,須貝 宏行,Eaton G. H . :
″理研-RAL ミュオン施設における DT 系ミュオン触媒核融合実験：磁場依存性測定 2″,
日本物理学会 2004 年秋季大会 , 青森, 高知 , 9 月 (2004).

165. 松田 恭幸:
″理研 RAL ミュオン施設における超低速ミュオンビーム生成実験(3)″,
日本物理学会 2004 年秋季大会 , 青森, 高知 , 9 月 (2004).

166. 赤石義紀 :
“ケイオン核 - “第二世代核”の登場”,
日本大学理工学部コロキウム、駿河台、２００４年７月

167. 石田 勝彦,永嶺 謙忠,松崎 禎市郎,河村 成肇,松田 恭幸,岩崎 雅彦,今尾 浩士,加藤 岑生,須貝 宏行,

棚瀬 正和,中村 哲,工藤 勝久,武田 直人,Eaton G. H．:
"Magnetic field effect in muon catalyzed fusion in D-T mixtures",
理研シンポジウム「理研 RAL におけるミュオン科学の現状・将来展開」，和光，5 月 (2004).

168. 大平-河村 聖子,田村 雅史,加藤 礼三,渡邊 功雄,岩崎 雅彦:
"μSR 実験法を用いた[Pd(dmit)$_2$]塩の磁性研究 II",
日本物理学会第 59 回年次大会，福岡，3 月 (2004).

169. 小池 貴久:
"K 中間子窒素原子のカスケード計算 II",
日本物理学会第 59 回年次大会，福岡，3 月 (2004).

2003

170. 小池 貴久:
"K 中間子窒素原子のカスケード計算",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

171. 山中 信弘,木野 康志:
"陽電子弾性散乱断面積の時間依存チャネル結合計算",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

172. 松崎 禎市郎,永嶺 謙忠,河村 成肇,石田 勝彦,松田 恭幸,岩崎 雅彦,今尾 浩士,加藤 岑生,須貝 宏行,
棚瀬 正和,中村 哲,工藤 勝久,武田 直人,Eaton G. H．:
"ミュオン触媒 t-t 核融合における t+t 反応の n-α粒子相関",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

173. 石田 勝彦,永嶺 謙忠,松崎 禎市郎,河村 成肇,松田 恭幸,岩崎 雅彦,今尾 浩士,加藤 岑生,須貝 宏行,
棚瀬 正和,中村 哲,工藤 勝久,武田 直人,Eaton G. H．:
"理研-RAL ミュオン施設における DT 系ミュオン触媒核融合実験：磁場依存性測定",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

174. 松田 恭幸,Bakule P．,Strasser P．,三宅 康博,永嶺 謙忠,下村 浩一郎,牧村 俊助,岩崎 雅彦,
松崎 禎市郎,石田 勝彦:
"理研 RAL ミュオン施設における低速ミュオンビーム生成(II)",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

175. Strasser P．,永嶺 謙忠,松崎 禎市郎,石田 勝彦,松田 恭幸,板橋 健太,岩崎 雅彦:
"First measurement of muon transfer reaction with implanted argon ions in solid deuterium films",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

176. Joensson P. E．,高山 一,香取 浩子,伊藤 厚子:
"Field effects on the glassy dynamics of an ising spin glass",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

177. 宮寺 晴夫,永嶺 謙忠,下村 浩一郎,西山 樟生,田中 宏幸,池戸 豊,石田 勝彦:
"KEK 中間子における大立体角軸収束ミュオンチャネルの現状と熱ミュオニウムイオン化法の開発",
日本物理学会 2003 年秋季大会，宮崎, 岡山，9 月 (2003).

178. 山中 信弘,木野 康志,高野 靖史,工藤 博司,市村 淳:
"気体中における陽電子消滅の理論研究",
日本物理学会第 58 回年次大会 , 仙台 , 3 月 (2003).

179. Strasser P . :
"Towards muon spectroscopy with unstable nuclei",
「RI ビームファクトリーと研究計画」ワークショップ , 和光 , 3 月 (2003).

180. 大平 聖子,田村 雅史,加藤 礼三,渡邊 功雄:
"μSR 実験法を用いた[Pd(dmit)$_2$]塩の磁性研究",
日本物理学会第 58 回年次大会 , 仙台 , 3 月 (2003).

181. 松崎 禎市郎:
"ミュオン触媒 t-t 核融合中性子エネルギースペクトルから見た t+t 反応出口チャネルにおける強い n-α 相関",
CNS-RIKEN 研究会「少数系・不安定核における連続状態とその展望」 , 和光 , 2 月 (2003).

2002

182. 吉野 元,Jonsson P. E . ,Mathieu R . ,Nordblad P . ,香取 浩子,伊藤 厚子:
"スピングラスの特異な連続リエントラント転移:温度カオス効果と動的メモリーの検証実験",
日本物理学会 2002 年秋季大会 , 春日井 , 9 月 (2002).

183. 岡本 敏史,Khaliullin G . :
"強磁性チタン酸化物における軌道自由度の量子効果",
日本物理学会 2002 年秋季大会 , 春日井 , 9 月 (2002).

184. 石田 勝彦,永嶺 謙忠,松崎 禎市郎,河村 成肇,松田 恭幸,今尾 浩士,棚瀬 正和,加藤 岑生,須貝 宏行,工藤 勝久,武田 直人,Eaton G. H . :
"理研-RAL ミュオン施設における DT 系ミュオン触媒核融合実験:非平衡分子組成効果",
日本物理学会 2002 年秋季大会 , 東京 , 9 月 (2002).

185. 河村 成肇,永嶺 謙忠,松崎 禎市郎,石田 勝彦,中村 哲,松田 恭幸,今尾 浩士,棚瀬 正和,加藤 岑生,須貝 宏行,工藤 勝久,武田 直人,Eaton G. H . :
"理研-RAL ミュオン施設における DT 系ミュオン触媒核融合実験:固体での温度依存性",
日本物理学会 2002 年秋季大会 , 東京 , 9 月 (2002).

186. 大平 聖子,阿波賀 邦夫,藤田 渉,渡邊 功雄,永嶺 謙忠:
"μSR 法を用いた p-NPNN·Cu(hfac)$_2$の磁性研究",
日本物理学会 2002 年秋季大会 , 春日井 , 9 月 (2002).

187. 家村 一彰,大谷 俊介,渡部 力,鈴木 洋,高柳 俊暢,金井 保之,坂口 修一,加藤 太治,北澤 真一,関口 雅行,Tong X . ,Currell F . :
"He^{2+}-アルカリ土類衝突における高励起状態への 2 電子捕獲過程",
原子衝突研究協会第 27 回研究会 , 京都 , 8 月 (2002).

188. 伊藤 剛士,松崎 禎市郎,加藤 岑生,須貝 宏行:
"高純度水素同位体ガス供給装置の開発",
日本原子力学会 2002 年春の年会 , 神戸 , 3 月 (2002).

189. 山瀬 博之, 河野 浩:
"t-J 模型に基づく YBCO 系の磁気励起の研究",
日本物理学会第 57 回年次大会 , 滋賀県草津 , 3 月 (2002).

190. 山瀬 博之:
"Slave-boson mean-field theory of t-J model - fermi surface and magnetic excitation spectrum",
文科省科研費特定領域研究(A)「遷移金属酸化物における新しい量子現象研究成果報告会,東京,1 月 (2002).

Awards given to the work done in Advanced Meson Science Laboratory

- T. Yamazaki(Research Consultant) received
  "The Person of Cultural Merit Award (Agency for Cultural Affairs)" in 2009

- S. Okada (former Special Postdoctoral Researcher) received
  "3rd " Young Scientist Award of the Physical Society of Japan" in 2009

- I. Watanabe (Senior Researcher) received
  "44th Toray Science and Technology Grant" in 2003

- K. Itahashi (Senior Researcher) received
  "The GSI Exotic Nuclei Community Membership Award" in 2003

3.6. Future Plan

Feasibility studies of the future projects themselves are part of our research activity, and some of them are described in research topics of this paper. Actually, many experimental proposals / letter of intents have been submitted to J-PARC PAC from RNC researchers including ourselves. Hadron physics side, it is very difficult to realize those experimental projects in short term with the present hadron hall at J-PARC. Thus, we are proposing "institutional-based contribution to J-PARC" to internal RNC conceptual-planning committee, focusing on research related with "origin of the hadron (matter) mass" together with Radiation Laboratory of RNC. As a part of discussions of the future project of RNC, our proposal was discussed as one of the interesting scenarios, although it is not very simple because RNC has primary mission to operate RIBF.

In the muon science side, we are facing at extreme difficulty for the future plan. because quite similar facility MUSE is starting up in J-PARC MLF hall, although there is still a long way to go for the full commissioning. It is quite important to make our facility as competitive as possible, and to establish work sharing with KEK muon group. One of the key issues is to make substantial progress in ultra-cold muon production and establish the technology to accelerate the ultra-cold muon without heating up. If it is realized, one can realize "muon magnetic microscope" which can open new research field in muon science. This is also a key to realize "new precise muon anomalous-magnetic-moment (g-2) measurement" to confirm the physics beyond standard model. The high temperature solid μCF is also an important research program to be done at RIKEN-RAL, because of the difficulty of radiation safety at J-PARC.

The Advanced Meson Science Laboratory's future plan has a deep relationship with J-PARC. We wish to try our best to realize "RIKEN J-PARC cooperation center" under the leadership of the RNC director.

3.7. Curriculum Vitae (Chief Scientist)

Name:	Masahiko Iwasaki
Date of birth:	30 August 1958
Nationality:	Japanese
Home address:	1-30-13 Higashitamagawa, Setagaya-ku, Tokyo, 158-0084, Japan
Affiliation:	Advanced Meson Science Laboratory, RIKEN Nishina Center for Accelerator-Based Science,
Position:	Chief Scientist
Address:	2-1 Hirosawa, Wako-shi, Saitama, 351-0198, Japan
Tel./ Fax:	+81-48-467-9352 / +81-48-462-4648
E-mail address:	masa@riken.jp

Education and Degrees

March 1982	Graduate from Department of Physics, Faculty of Science, University of Tokyo
March 1987	Completion of Department of Physics, Graduate School of Science, University of Tokyo
June 1987	Doctor of Science, University of Tokyo

Appointment:

April 1987	Assistant Professor, Meson Science Laboratory, Faculty of Science, University of Tokyo
January 1997	Associate Professor, Department of Physics, Graduate School of Science and Engineering, Tokyo Institute of Technology
April 2002	Chief Scientist, Muon Science Laboratory, Discovery Research Institute, RIKEN (Institute for Physical and Chemical Research) Visiting Professor, Department of Physics, Graduate School of Science and Engineering, Tokyo Institute of Technology
April 2004	Chief Scientist, Advanced Meson Science Laboratory, Discovery Research Institute, RIKEN (Institute for Physical and Chemical Research)
April 2005 – Present	Professor, Department of Physics, Graduate School of Science and Engineering, Tokyo Institute of Technology
April 2006 - Present	Chief Scientist, Advanced Meson Science Laboratory, RIKEN Nishina Center for Accelerator-Based Science, RIKEN (Institute for Physical and Chemical Research)

Prize:

March 2005	22nd Inoue Prize for Science / Inoue Foundation for Promotion of Science

Academic Activities:

(present)	Chair of Chief Scientist Assembly, RIKEN
	Member of Japan Physics Society
	Member of Japan Meson/Muon Science Society
	Member of Program Advisory Committee of Muon Science of J-PARC