

SDD status

- **Test bench (SDD#1~4)**
- **Main cryostat (SDD #0)**

E17 meeting 24/Sep./2009

Test bench work

- ✓ **Up to previous meeting**

Checked SDD(#1~4) resolution with test bench

- 1. w/ preamp #1**
- 2. outside of the vacuum chamber**

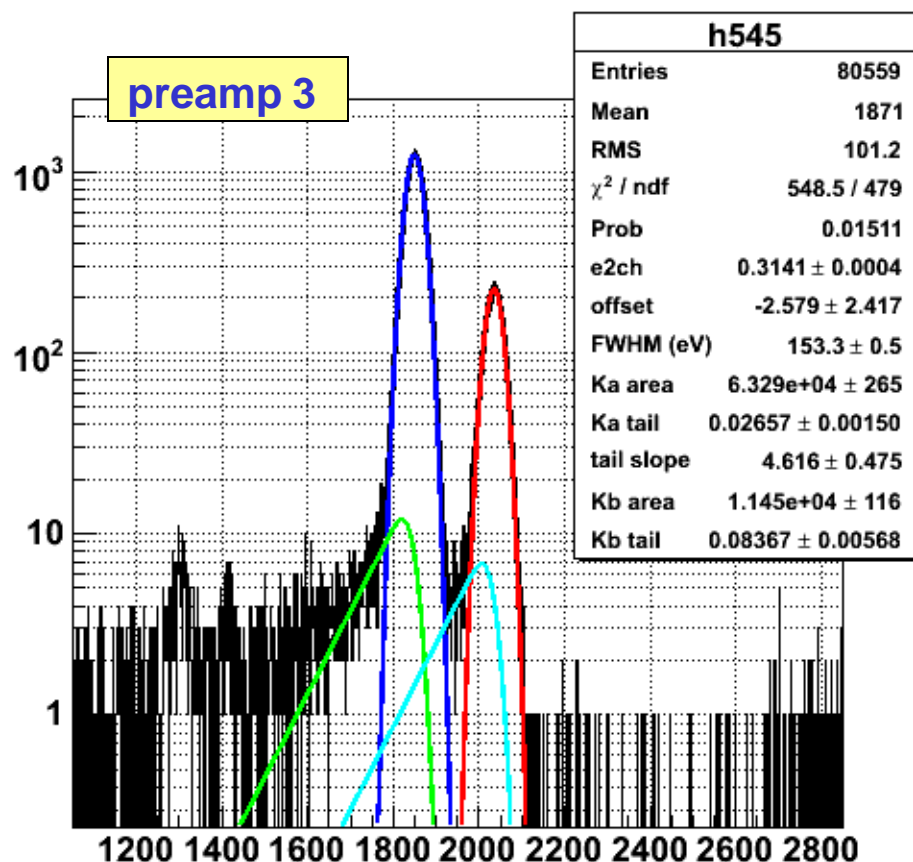
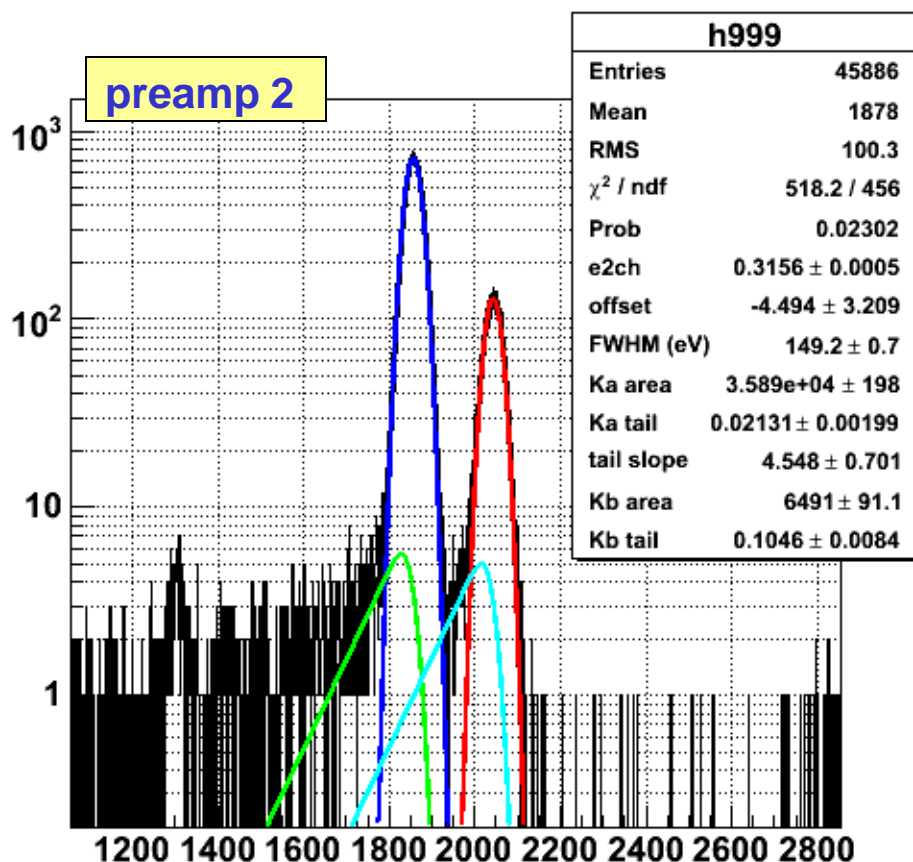
Preamp #4 was broken → asked Hannes-san to bring back to SMI

- ✓ **Contents of this meeting report**

- 1. Operation check for other preamp (preamp #1, #2, #3)**
- 2. Installation preamps into the vacuum chamber**

Operation check for preamp #2,#3

Preamp setting **outside of the vacuum chamber** (W/ SDD #2)



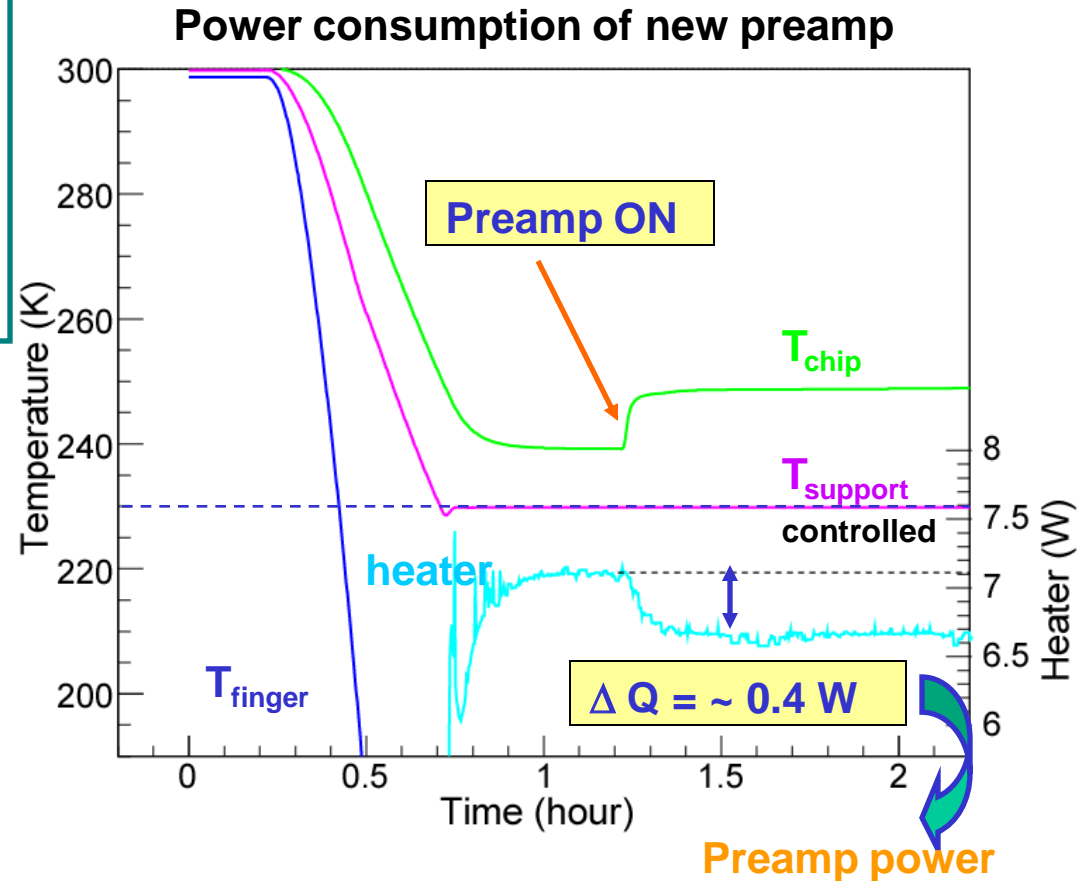
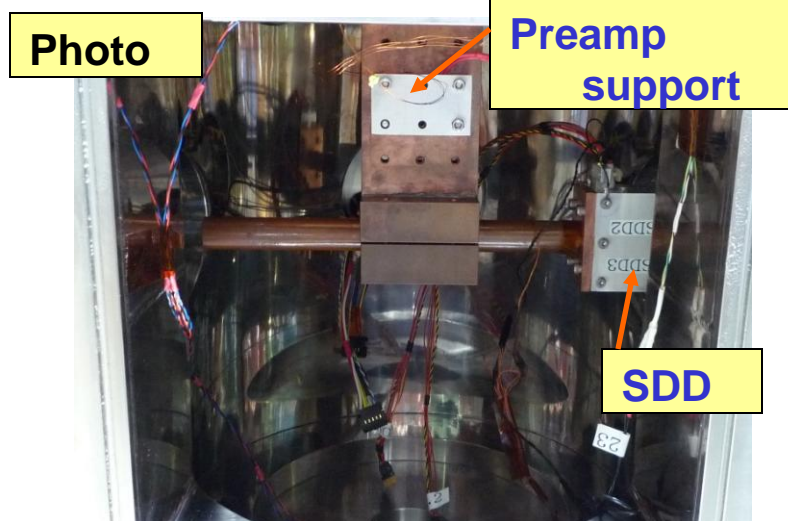
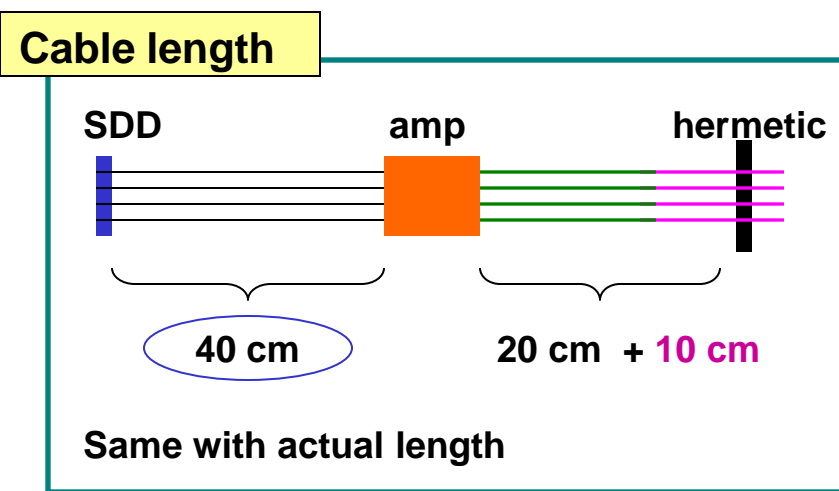
Resolution ~ 150 eV

Preamp (#1,#2,#3) are working well

New preamp inside the vacuum

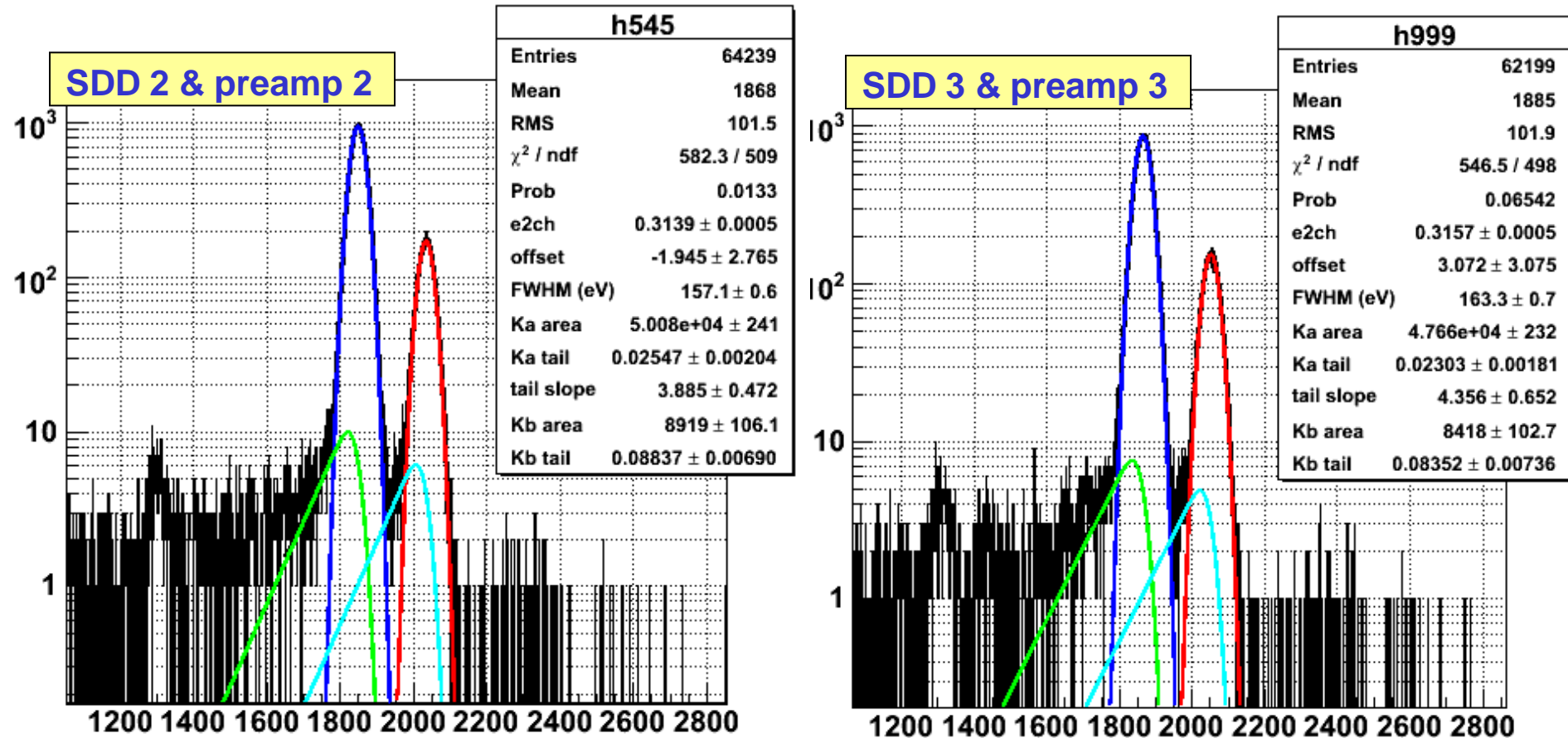
During this, preamp #1 was broken
by miss operation

→ asked Ishiwatari-san to bring back to SMI



New preamp inside the vacuum

Resolution check



Resolution for SDD#2 (w/ preamp #2) and SDD#3 (W/ preamp #3)
are both ~160 eV

Working inside vacuum

Resolution is slightly worse

→ need further check

Summary of test bench work

- ✓ Preamps #2,3 are confirmed for operation inside vacuum

Resolution ~ 160 eV → reason will be studied in the next month

Further study (long-term stability, T_{preamp} dependence) will be done in the next

preamp status

#1, #4	Send back to SMI to repair
#2, #3	Basically working well in KEK
#5	Newly brought to KEK by Ishiwatari san

SDD with main cryostat

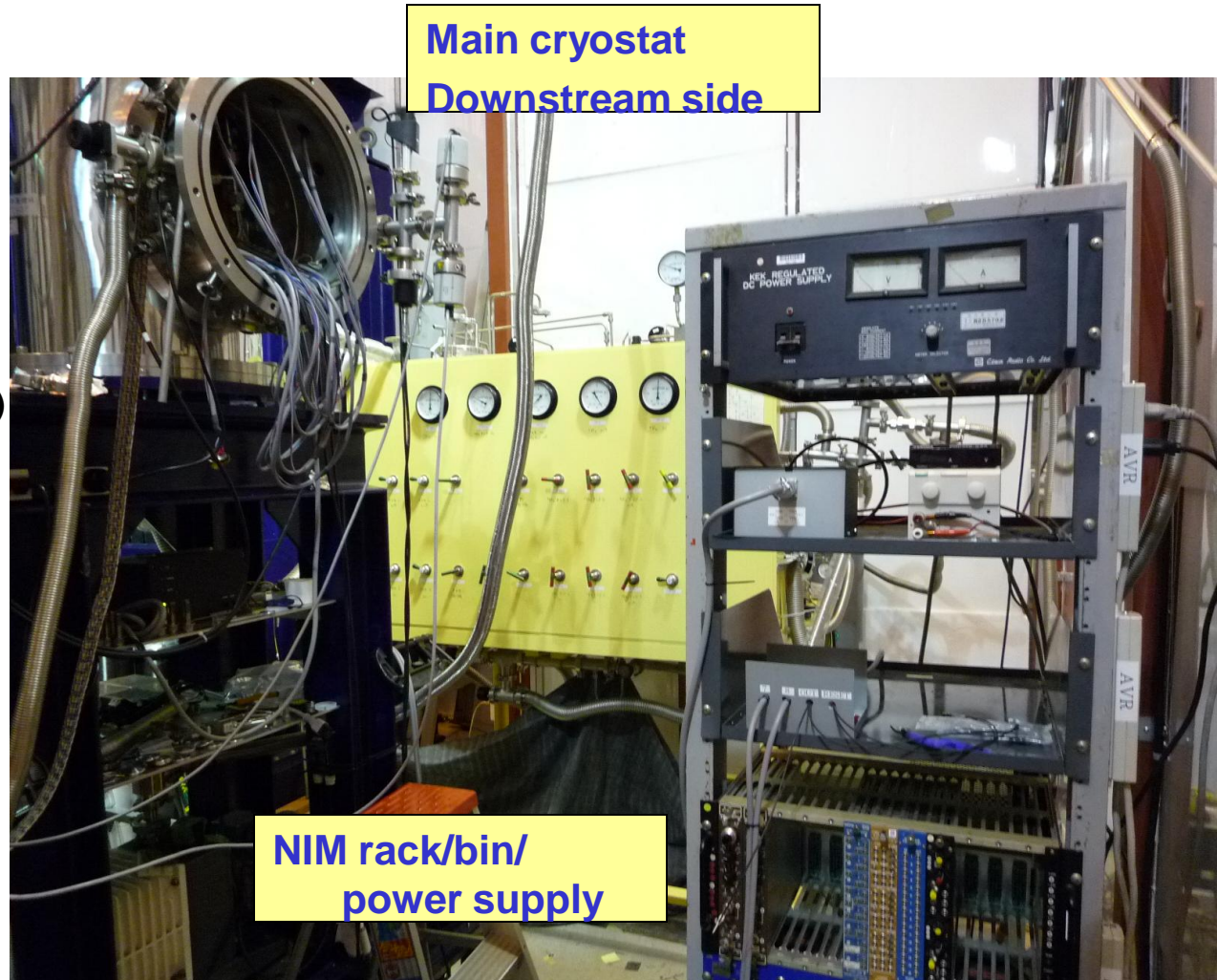
Installation into the main cryostat

Install SDD #0 (24 V preamp)

Same system with test bench

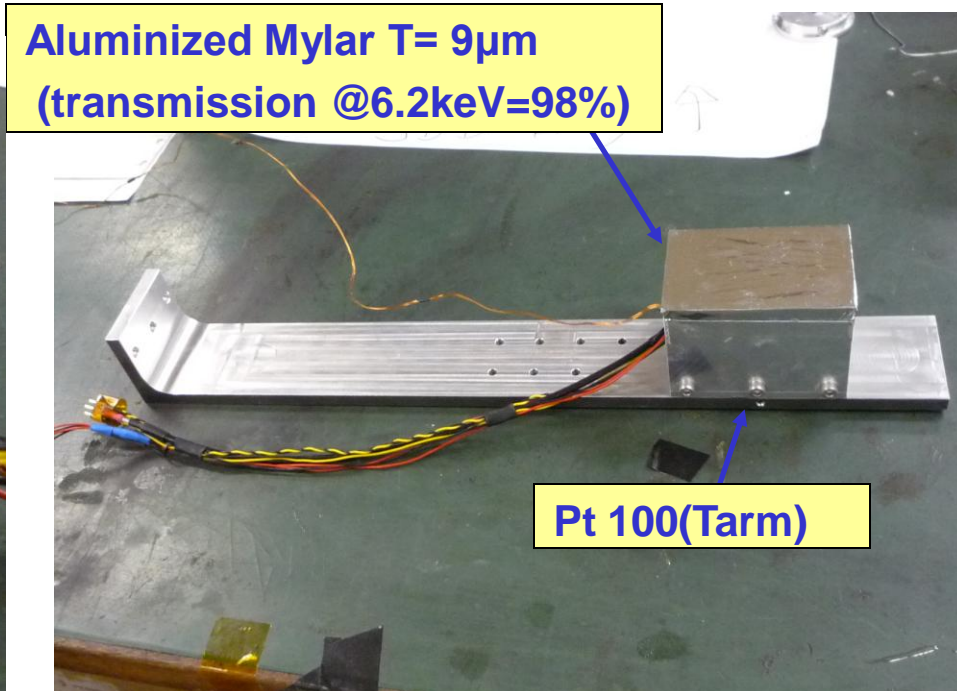
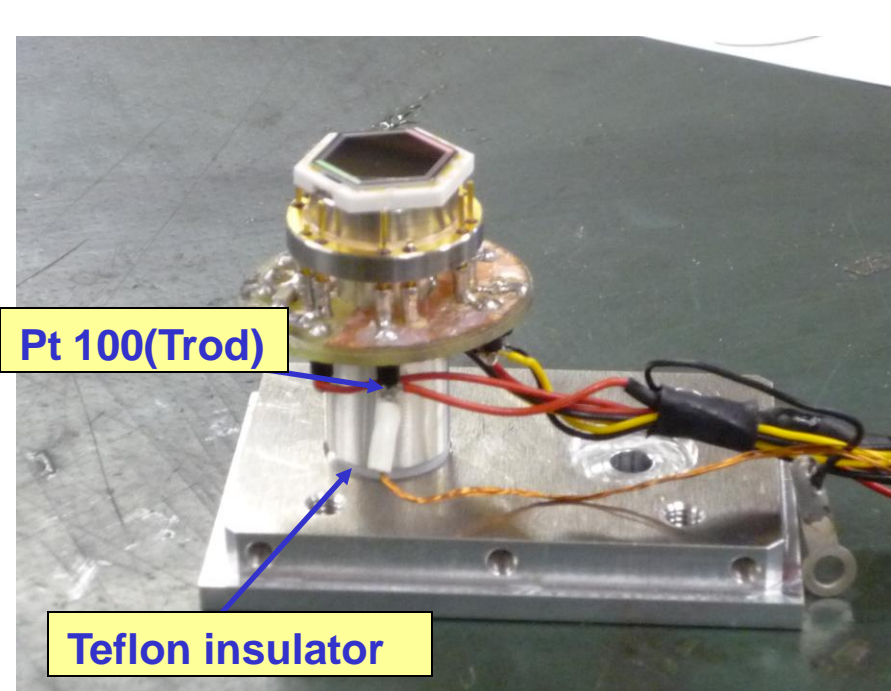
- KEK regulated DC supply (supply $\pm 12V$ or $\pm 24V$)
 - KIKUSUI DC supply (SDD HVs) used in E570
 - CAEN sh. Amp (N568b) borrowed from SMI
- ...etc

All signal/voltage cables are fed through hermetic port at down stream flange (preamp- flange ~ 2m cable)

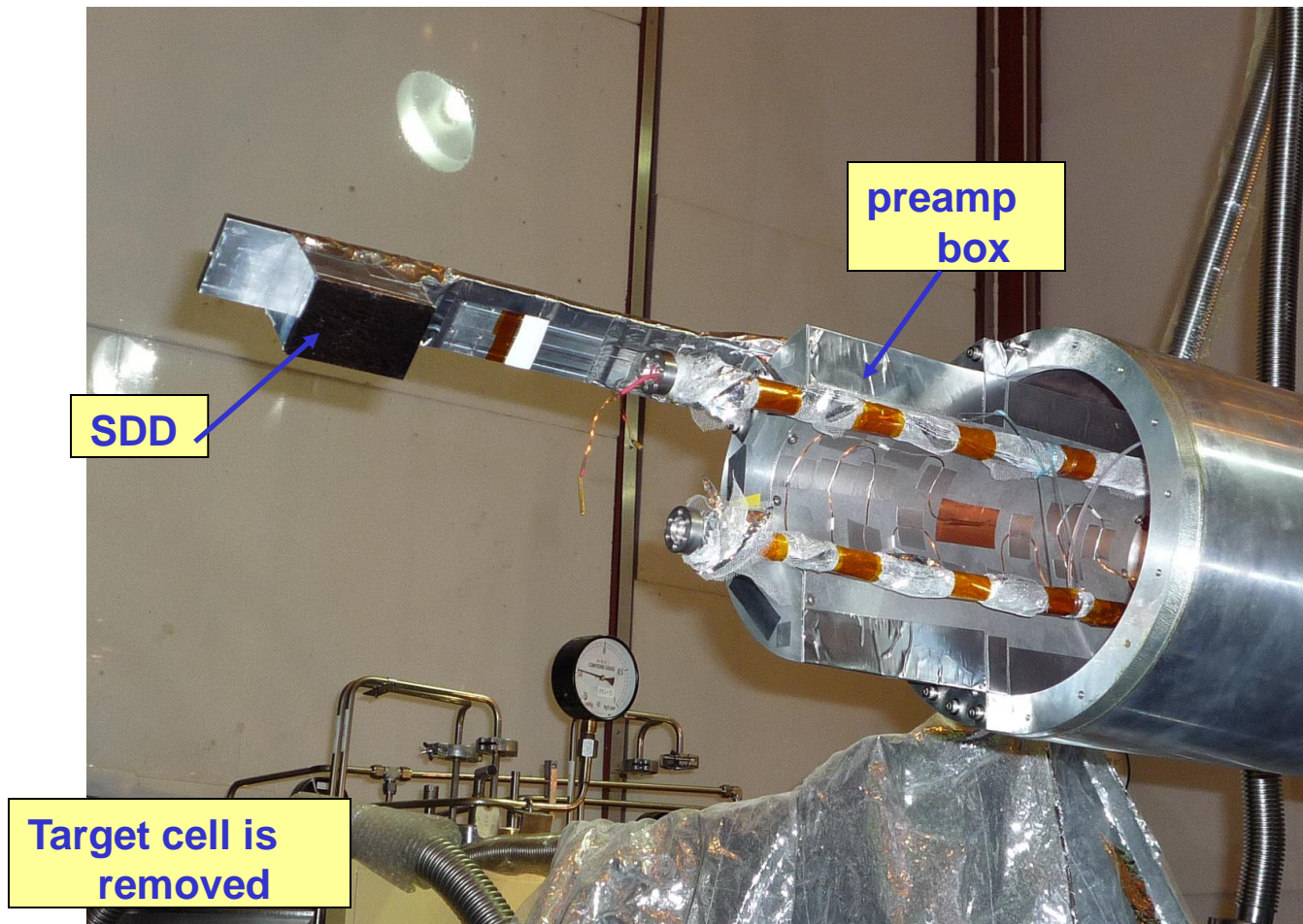


cf. Ishimoto-san's design

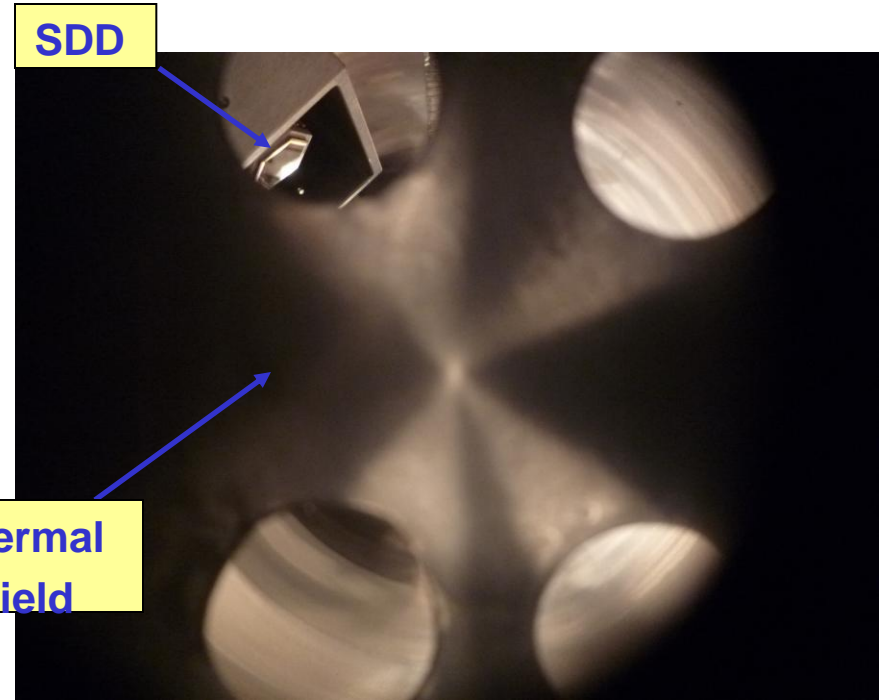
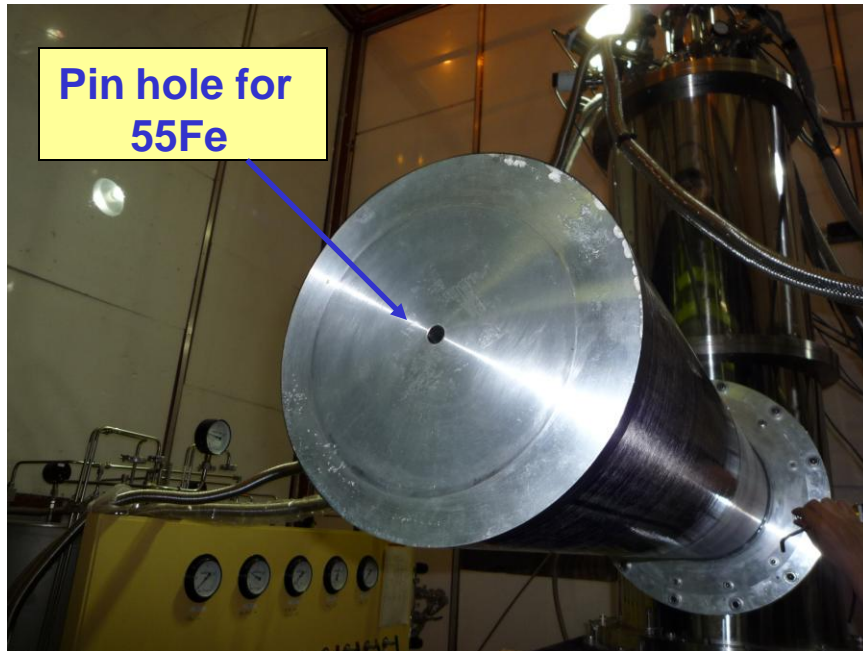
Setting SDD onto the SDD-Arm



Setup



Check with ^{55}Fe source

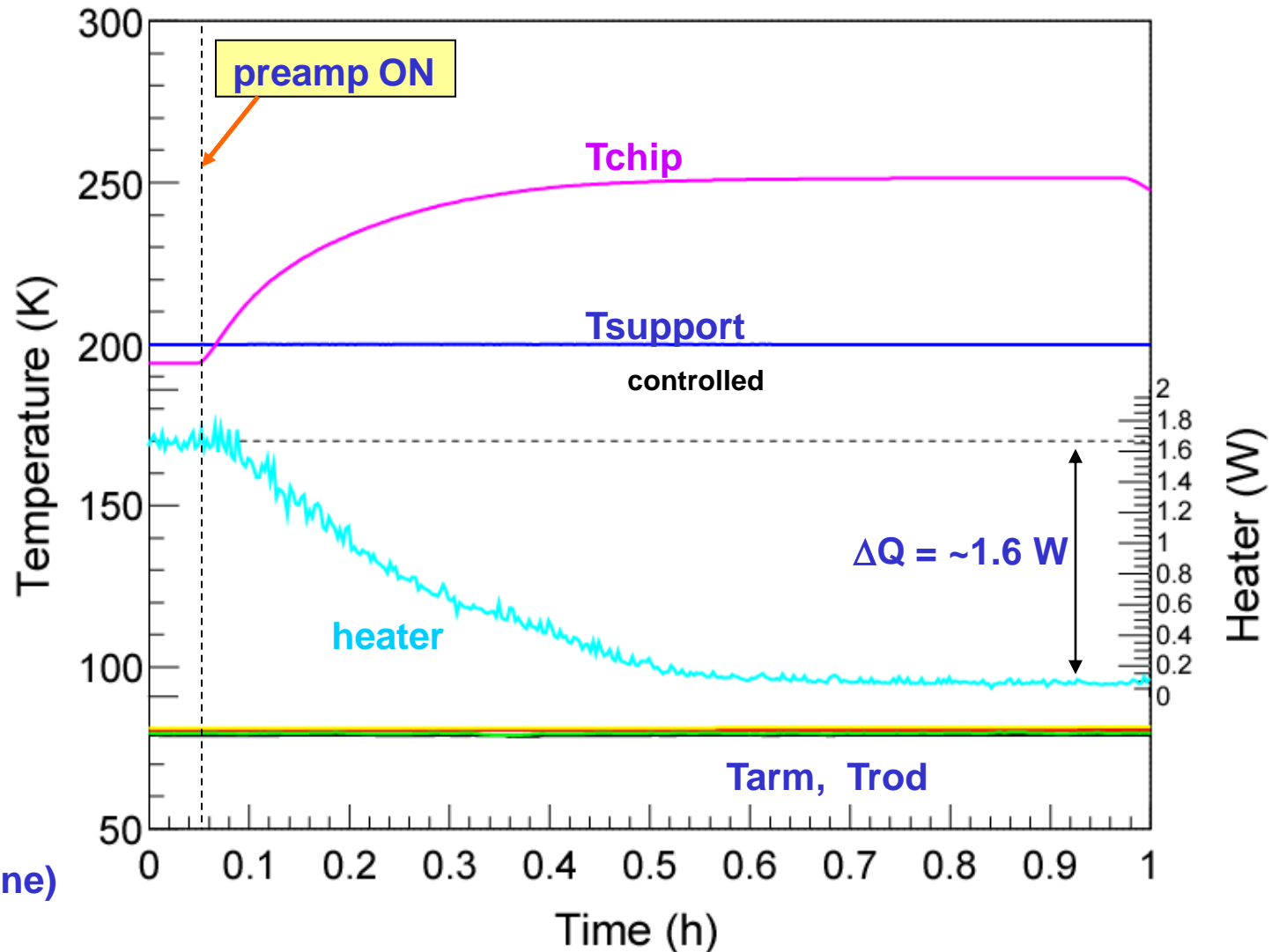


**View from the vacuum chamber hole
(insulators are temporary removed)**

Exposed to ^{55}Fe source from outside of vacuum chamber.

Temperature after LN₂ fill

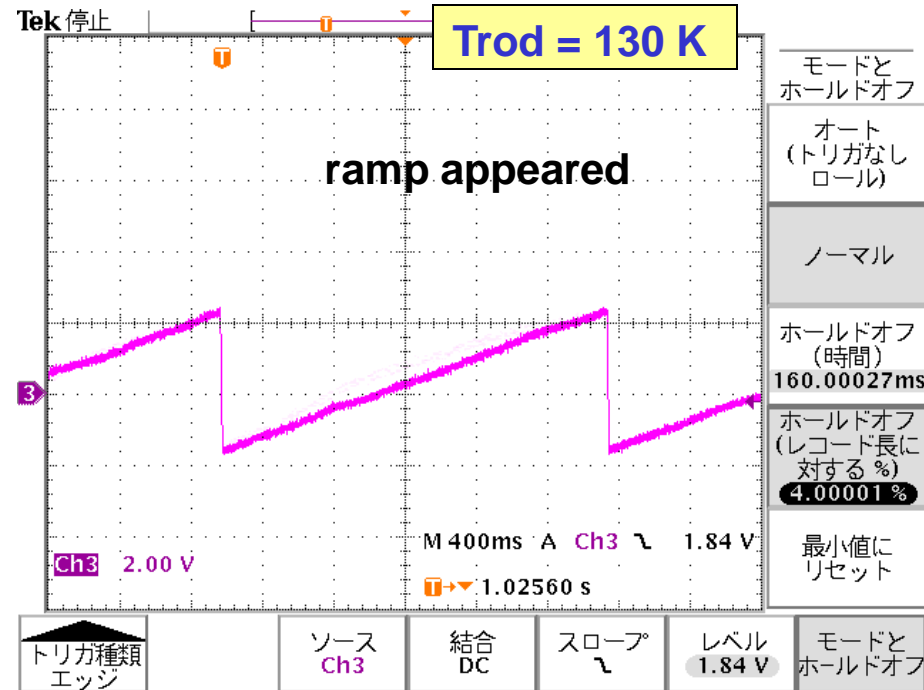
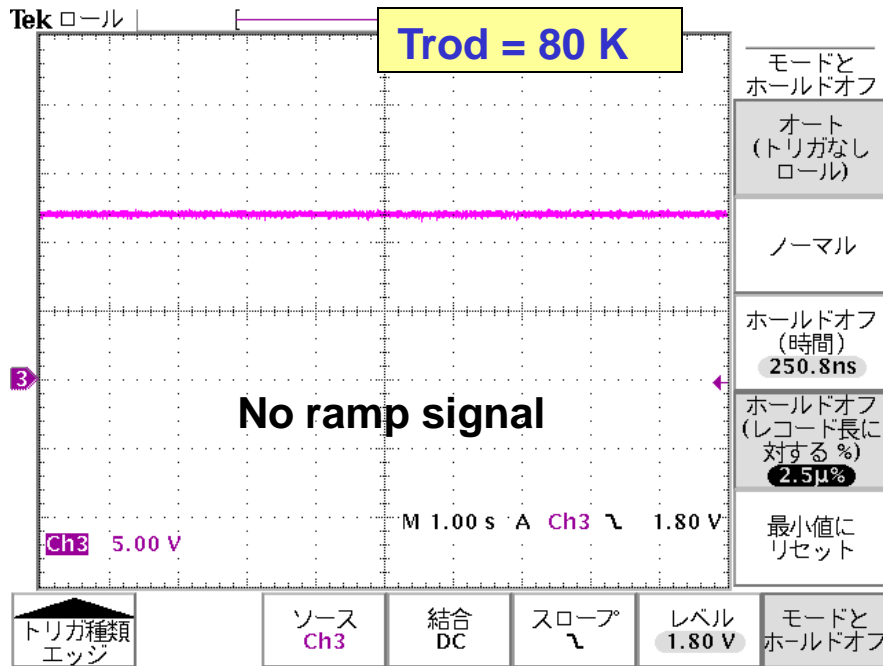
Temperature change after LN2 fill



Ramp signal?

Check the preamp out signal

Warming up



Cooling down

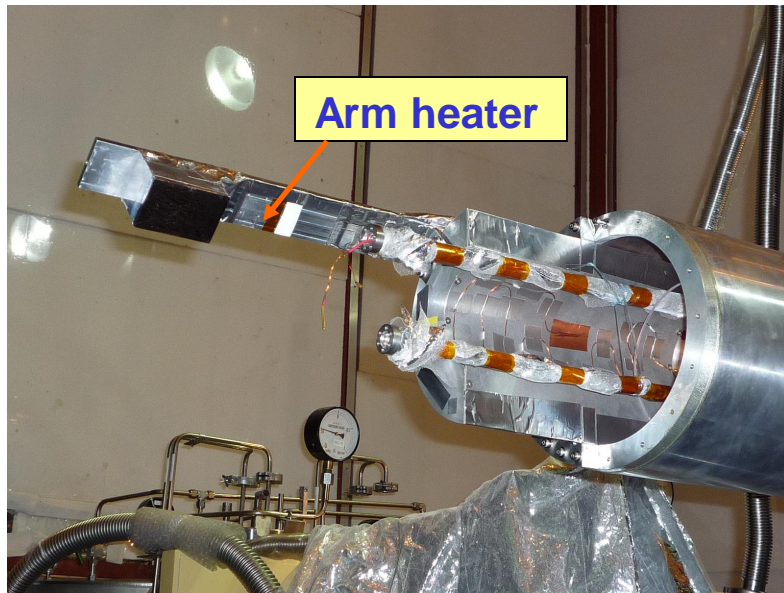
Cannot see ramp signal with Trod = 80 K

Need to check further

SDD heater

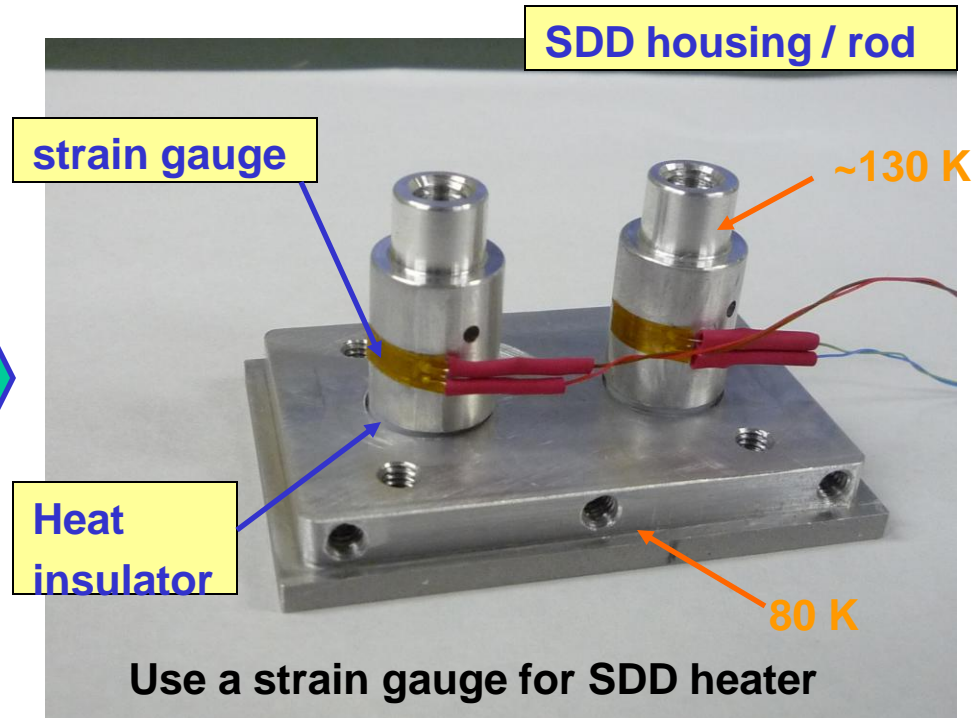
- ◆ SDD self-heating $\rightarrow \Delta T_{rod} = \sim 1$ K (insufficient)
- ◆ Preparing SDD heater W/O warming up SDD housing and SDD arm

Tentative one



Warm up SDD arm

\rightarrow Not good for the He target operation



Warm up SDD rod only

\rightarrow minimum effect to He target

Summary of main cryostat work

- ✓ **Installed SDD (SDD #0) into the main cryostat**
 - **Prepare same modules with test bench**
 - **Calibration by ^{55}Fe from outside**

- ✓ **Cannot see ramp signal with low temperature**
 - **Further investigation is needed**