

Status Vienna

28.05.2009

New Setup for **preamp inside**

- New chamber -> bigger, influence on cables
- SUB voltage outside
- ^{55}Fe source inside
- X-ray tube (Kapton window)
- Ti and Cu foil inside
- Cable length: 2m

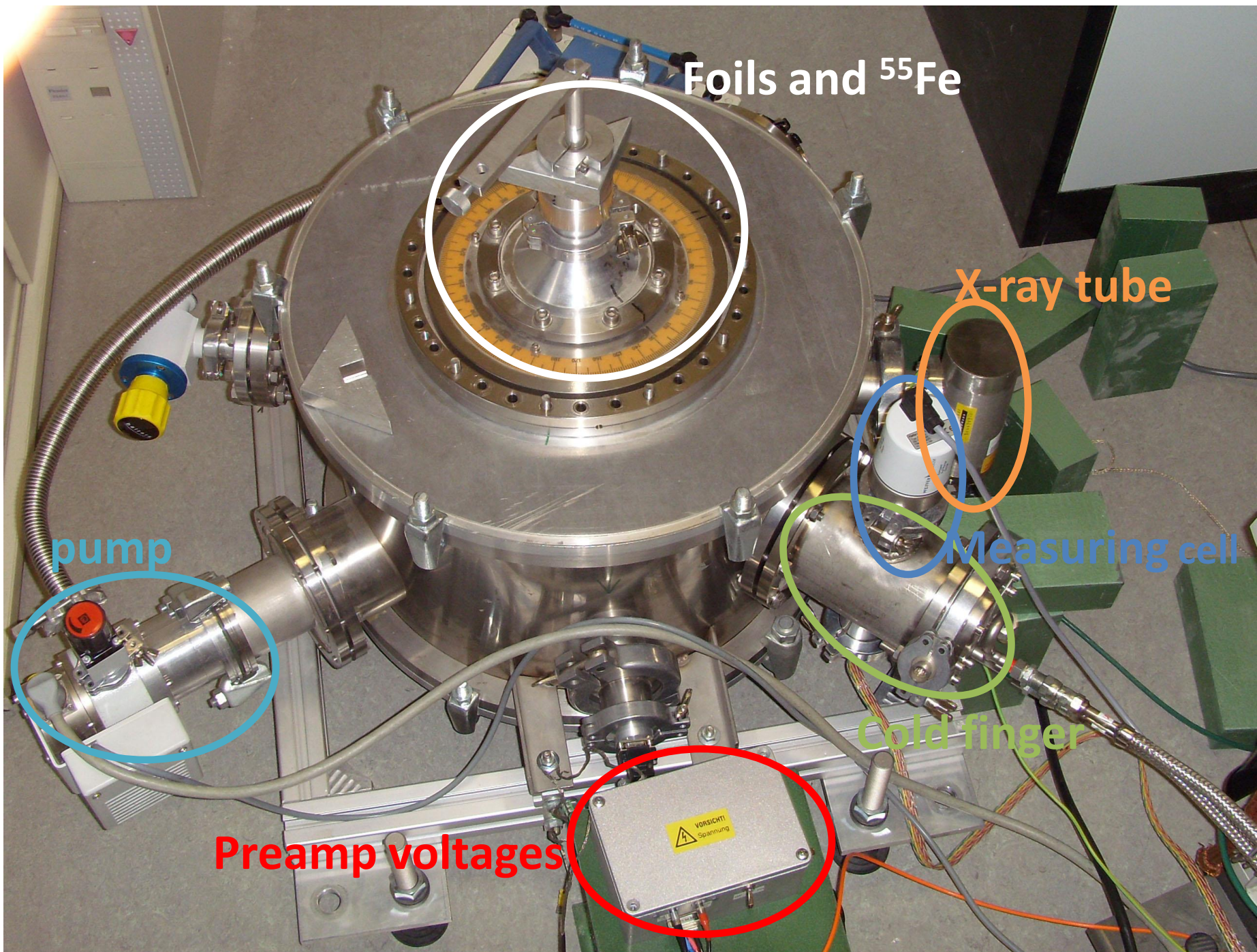
Foils and ^{55}Fe

X-ray tube

Measuring cell

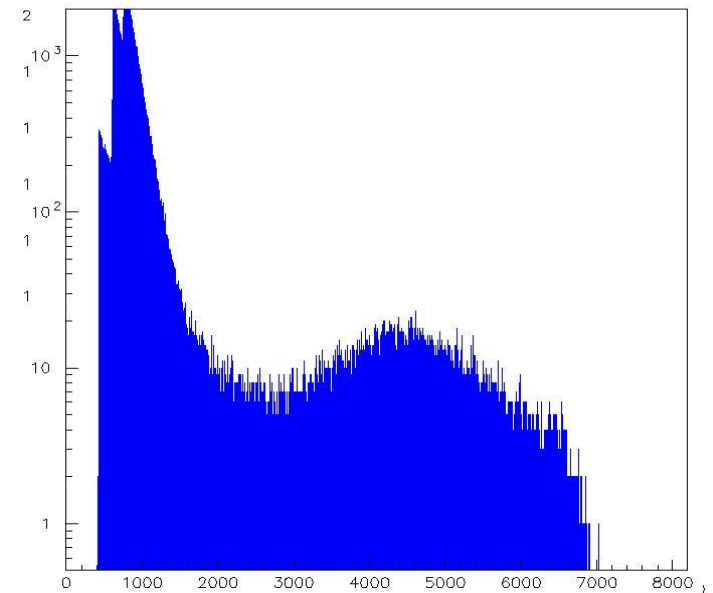
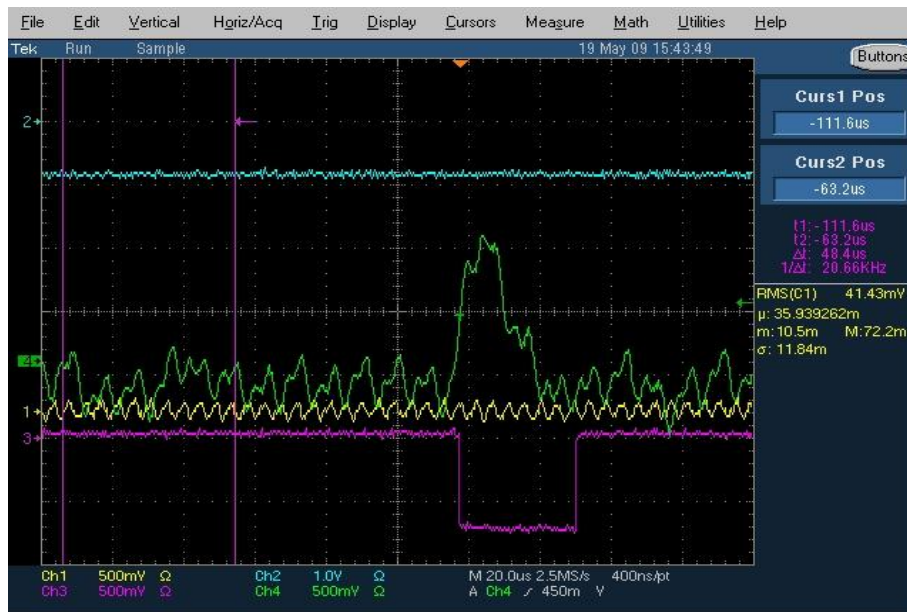
Cold finger

Preamp voltages



Problems

- Cooling system broken: not $< 200\text{K}$
- SUB voltage potentiometer broken
- Cooling transport to preamp broken \rightarrow preamp too hot
- Terrible signal oscillations



Solving problems

- ✓ SUB voltage potentiometer repaired
- ✓ Cooling system works now properly
- ✓ Preamp at 0°C during operation mode
- ✓ Grounding on SDD changed
- ✓ SUB voltage filter changed
- ✓ Value of SUB voltage changed to optimum value

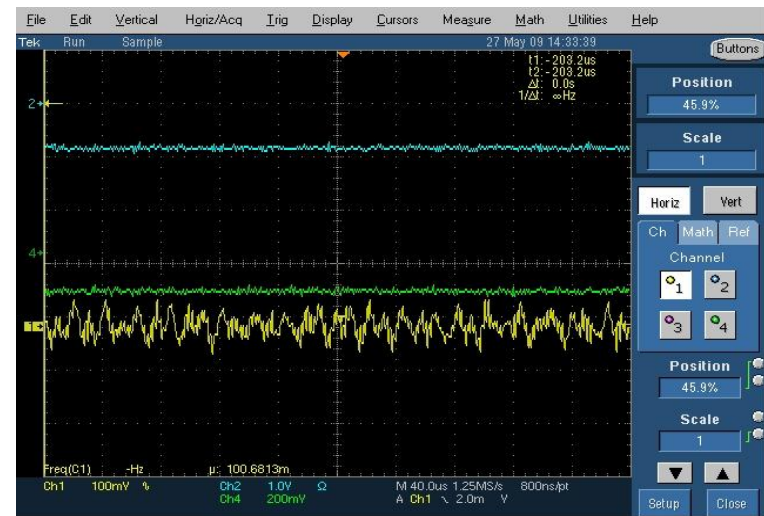
Results

No changes in the signal!!

- Warm up:
- Playing around with cables
- changing the SDD's position on the chamber
- Lay cables for SDD outside, no coils (linear setup)



SUB voltage: everything turned off



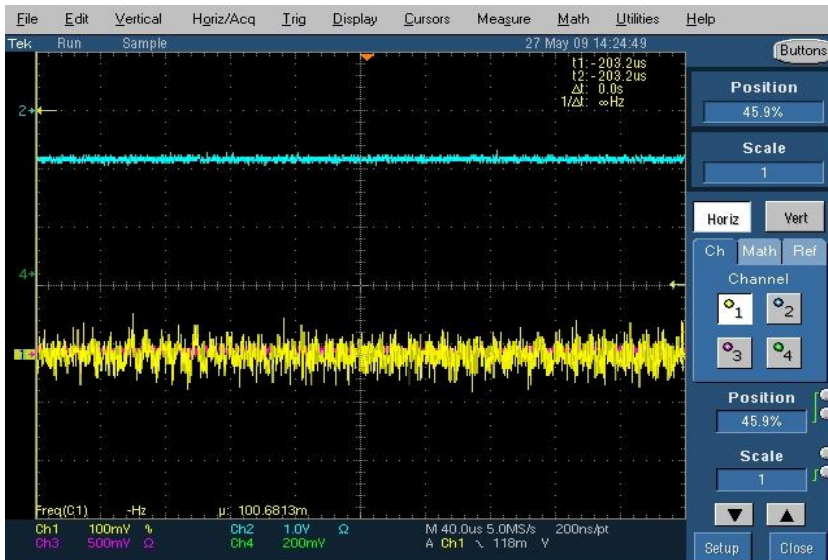
SUB voltage: linear setup



SUB voltage: SDD on chamber



SUB voltage: SDD on chamber



SUB voltage: SDD away from chamber

Cables of SDD shielded

Other ideas:

Grounding of chamber?

Resonance in the chamber?

Wrong connection of cables?

Printed circuit board of SDD?

important values

- SUB: -1.5V
- BACK: between -50V and -60V
- R1: between -10V and -30V
- RX: between -140V and -120V
- Ramp: height $\sim 6V$, period of $\sim 2s$ @ 135K
- Shaping time: $3\mu s$
- SDD @ 135K
- Amplifier: CAEN

outlook

- 8 SDDs were delivered
- testing all SDDs
- testing all SDDs with one preamp for each
- Preparing housing for SDDs and preamps