

Minutes of the ISOLDE Physics Group Meeting, July 20th 2016

There were no comments to the minutes of the previous physics group meeting.

Technical news

- **GPS**

- Delivered ^8He to IDS until last Thursday without major problems reported.
- Target changed on Monday to molten lead for next IDS beam time on mercury isotopes.

- **HRS**

- Delivered radium beams to CRIS until Wednesday morning.
- The frontend PC *cfv-197-bisoinst* crashed several times during the last week. It is due for replacement, but in the meantime users should check it in case of sudden loss of beam.
- The fuses of the ISCOOL RF amplifier were replaced. Keep in mind not to increase amplitude above 1.1V. Software limit is being implemented.
- CRIS noted that the ISCOOL bunch width might have been larger than usual during the radium run ($\sim 5 \mu\text{s}$).
- Sunday there were problems with three ion-optics power supplies, YHRS.QP180-NEG, YHRS.QP330-NEG and YHRS.QP330-POS, leading to loss of beam. The power supplies were replaced, but the replacements were initially connected incorrectly, so the problem continued to occur. After being connected correctly on Monday the power supplies worked fine. A new trip of the same elements was reported however on Tuesday, to be checked if the problem is 100% solved.

- **REX**

- There were problems with the main power supply of the 7-gap II. It has been replaced.
- Three other power converters were replaced, after exhibiting problems.
- The 9-gap is being phased, which should mark the end of the REX set-up.

- **HIE-ISOLDE**

- The short observed in the current lead of the first solenoid is being investigated. A solution would be to keep it floated, but it remains to see if this can be used at high current. 50 A would allow 90% transmission and 5.5 MeV /u, but so far the solution was only tested up to 1 A. Work in progress.
- The leak on the second cryomodule has not been identified yet, but it seems to be small enough to use the cryomodule as it is.

- **Targets**

- Intervention performed on the cooling water station for the frontends, to increase capacity from 50% to nominal. Another intervention on the MEDICIS montrac.
- Target unit for ISOLTRAP (UCx-n quartz) is ready and being filled, SiC unit under production. Nano-structured UCx unit in preparation using a new production method, which should be faster than the one used for the previous similar unit.

- **RILIS**

- During the He run on GPS, RILIS performed some radium scheme development on HRS. Two new auto-ionizing states were found.
- On Monday evening they performed in-source spectroscopy of $^{223,225,226}\text{Ra}$, which allowed extrapolating the laser frequencies and provided useful information for continuing the CRIS experiment.
- Preparing Cd scheme for ISOLTRAP run.

Physics and schedule

- The users report that good data were obtained from the ^8He run with at IDS. It was the first use of the ISOLDE neutron detectors, modelled after the VANDLE array. The new detectors performed well.
- The CRIS run on HRS aimed at performing resonance laser spectroscopy of radium ions from the 1^+ to the 2^+ state. A large collisional ionization background, together with only partial knowledge of the Ra ionization scheme prior to the beam time, required the scans to be performed over a wide frequency range, with small signal-to-noise ratio. After three quarters of the beam time without success in this direction, the CRIS team decided switching to atom spectroscopy. A collaborative effort of scheme development with RILIS allowed continuing the program and lead to good proof-of-principle data to build on in the future.
- The next run starts on GPS and concerns the study of $^{207,208}\text{Hg}$ with IDS. It is a search for octupole states, which requires high statistics. A check of ^{209}Hg will be performed.
- The ISOLDE physics schedule for the third trimester of the year is almost ready for publication.

Safety

- Don't forget to sort waste and especially radioactive waste. Special bins are in place next to the old control room.

Visits

- Friday there will be a visit of summer students organized by Magda.
- In one of the last ISOLDE visits students were amusing themselves with footage taken while using the hand and foot monitor. Groups will be reminded to adopt a decent conduct during the visits.

AOB

- There will a HIE-ISOLDE alignment activity, which might require clearing the space in the extension and moving a few of the existing cupboards.
- The new tape station will be tested at LA2. Space and access to electricity should be organized between Tim and the COLLAPS team.
- There has been an incident at CERN with a summer student caught trying to steal from an open office. Don't forget to lock your offices when leaving for longer time.
- The central area of b. 275 is crowded. The items which are not going to be used soon should be sent to long-term storage.
- Summer-student presentations will start in August. Student departure dates and preferences should be communicated to Stephan.

Seminar

- The meeting was followed by a seminar of André Welker from CERN/TU Dresden on *The new Phase-Imaging Ion-Cyclotron-Resonance technique and recent results at ISOLTRAP*

Next PG meeting will be held Wednesday July 27th at 2 pm, followed by a seminar to be announced.

Minutes taken by VM