Minutes of the ISOLDE Physics Group Meeting, May 10th 2017

There were no comments to the minutes of the last ISOLDE PGM.

Technical news

- **HRS**
  - HRS was set up last week for the CRIS indium experiment. It was initially difficult to inject the beam in the RFQ, which required finding new settings with respect to the ones which were considered standard.
  - It was discovered that the HRS laser window was coated from the previous year, which led to significant laser-power loss. The windows of both separators were inspected in the last winter shutdown and at the time it was concluded that only the GPS window must be replaced. An emergency intervention was thus scheduled and the HRS window was also exchanged by Bruce.
  - The intervention of Bruce revealed that the valve between the HRS front-end and separator sectors (HRS20) is not vacuum tight. Therefore, when the separator was vented for changing the window, despite the HRS20 valve being closed, this worsened also the vacuum in the front-end area, taking down the heating of the installed target unit. Since no intervention can be performed now on HRS, it is very important to remember that the valve between the two sectors does not hold vacuum. The HRS window will be examined in the following period of time, to establish what problem it has and why this problem was not detected during the winter shutdown inspection.
  - Fortunately, after the intervention of Bruce the proton scan could be performed and the beam time was back on track. One of the dipoles on the BTY line is still inverted on HRS, therefore the proton-position settings on HRS look unusual (on GPS they are as usual).
  - The front-end HV power supply broke on HRS during the CRIS run. As a fast solution, the GPS power supply was used instead. The second day the expert passed by and replaced the HRS power supply with a working one, taking the broken power supply to repairs. One should not forget to exchange back the two power supplies.
- **GPS**
  - The IDS run ended last Wednesday. The IDS team reported fluctuations in the stability of the beam, initially suspecting a problem on the separator side of the beam transport system, as had been reported at the end of last year by VITO. A check was later performed on a wire scanner, using a script for automatically recording the beam position and no unusual fluctuations were found. It is still possible that the problem was caused by one of the beam-transport elements to IDS.
  - The UC_x-cold-plasma target for the ISOLTRAP run on neutron-rich argon and krypton isotopes was installed on Friday. It was found that the target has a major leak, not allowing to pump the front-end section. A check with the target used by IDS confirmed that the leak is not on the front-end side, while a visual inspection of the target performed on Monday revealed no possibility of a quick fix. The leaky target was a used unit which had been only slightly irradiated in the previous year, also the only unit with a plasma source available for the ISOLTRAP run. The back-up plan is to leave the IDS target on the front-end and use it for whatever physics or tests can be performed with it by ISOLTRAP.
- **REX/HIE-ISOLDE**
  - The beam commissioning is going as planned.

- Some test beams were used with REX end of last week. Alberto performed tests using A/q = 4 and will move on from there to settings closer to the desired beams for physics.

- **RILIS**
  - An impromptu titanium scheme will be set up for an ISOLTRAP test on Thursday.
  - Tests of selenium and tellurium ionization schemes are scheduled to take place most likely beginning of next week.
- **Targets**
  - The target for the magnesium experiment next week is on track.
  - Joao Pedro is currently finishing at EPFL the preparation of the carbon-nanotube material for the boron run.

Physics and schedule

- The CRIS run on HRS will end tomorrow morning. The GPS proton scan will be performed in the morning on the converter. ISOLTRAP will use this target until next week.
- ISOLTRAP cannot pursue its intended physics program, but will stay within the boundaries of the extended beam request communicated to Karl at the beginning of the year: test the yields of neutron-rich titanium isotopes with the help of RILIS, perform test *Q*-value measurements using the PI-ICR technique or measure strontium and rubidium isotopes close to the krypton isotopes from the original beam request.
- As a general approach for future beam time, one should never rely on a used target as only option for an experiment. In the particular case of the ISOLTRAP beam time, the fact that the target was transported from ISOLDE to the Intersecting Storage Rings and back might have caused or aggravated its condition, even if it was only lightly irradiated in 2016. Therefore, used targets should only be back-ups for fresh targets and only re-used as primary option in the year in which the first irradiation occurred, meaning without them being moved out of ISOLDE. Because unfortunately it is not possible to test the used targets off-line due to contamination risks, Guilherme also suggested for the future to look into the possibility of testing all targets brought back to ISOLDE on the front-end, during the ISOLDE preparation phase.
- Originally, tape-station tests were being scheduled for next week on HRS (during the GPS experiment which does not use the central beam line), however the required tape-station control system might not be finalized until then, which would impose a change of plans.

Safety

- People who take the ISOLDE-specific, classroom radiation or electrical safety courses should contact Safety Training in advance in case they are not participating anymore. If they do not announce their absence, the safety-training responsibles are obliged to send an e-mail to a number of people (including the trainee's supervisor, as well as some safety responsibles) and inform them of their no-show.

Visits

- The visit of the rector of the Universidad Carlos III Madrid was moved to the 18th May.

AOB

- There will be a power cut tomorrow morning at 7:30 on the top floor of b. 508 in order to make the electrical connections for the cooling and ventilation. The installation will be finalized next Monday-Tuesday and the cooling circuit should be operational by Wednesday.
- The CERN relay race will take place June 1st. Volunteers are requested to contact Karl by next Wednesday.
- A number of non-member state students are available for ISOLDE summer-student projects. Magda has sent an e-mail to potential supervisors, who should contact her in case they are interested.

Seminar

- The meeting was followed by a seminar by Joseph Callingham, from the Netherlands Institute for Radio Astronomy, on "The (Radio) Spectral Revolution: Altering our understanding of radio galaxy evolution, the epoch of reionisation, and astroparticle acceleration".

The next PG meeting will take place on Wednesday, May 17rd, at 14:00. It will be followed by the third and last part of the lecture series on giant resonances by Angela Bracco from the University of Milano and INFN.

Minutes taken by VM