Minutes of the ISOLDE Physics Group Meeting, September 27th 2017

The meeting took place in room 26-1-022. There were no comments to the minutes of the last ISOLDE PGM.

Technical news

- **GPS/REX/HIE-ISOLDE**
  - The ^{94}Rb run continued last week until Thursday, with the beam post-accelerated to 6.4 MeV/u and delivered to Miniball. The technical stop which had taken place on Tuesday had no major impact on later ISOLDE operations. Nevertheless, also in the last day of beam time (as in the previous days) the experiment was limited to reduced proton-beam current, due to the radiation alarms being triggered.
  - After the end of the proton run on Thursday a few collections took place on GLM for Heidelberg.
  - There were no major technical problems. A couple of amplifiers tripped and were reset and a turbo-pump controller for the REXTRAP vacuum had to be replaced. There were, apart from the technical stop, a few trips of the PSB until Wednesday.
  - On Friday a new target was installed (Ta with GdB_6 line) for Nd beams. On Monday it was noticed that the mass factor spontaneously changed to 450. It is not clear why this occurred and led to some down time.
  - Last week the HIE-ISOLDE cavities were used for the first time in an attempt to bunch the beam. This is a development required by some future experiments.
- **HRS**
  - On Monday last week a used target (#599) was installed for the VITO experiment, with the purpose of producing Na beams.
  - The beam was difficult to set up due to the fact that the previous HRS settings had been for 40 kV and linear scaling to 50 kV did not work. Injection into the ISCOOL was particularly difficult, with the final achieved transmission at around 50%, although this was not a crucial problem for the users.
  - The first stable beam tuning was performed on Tuesday, continued with bunched beam on Thursday. The run finally started Thursday evening.
  - The vacuum group investigated the trips of CA0 elements. A few interlock cables were replaced and since there has been no additional trip. The HRS.QP330 trips are still under investigation.
  - There was a diagnostics issue yesterday, which was solved by restarting the FESA server.
- **RILIS**
  - Efforts are ongoing to set up a new Nd ionization scheme for the upcoming GPS run. It is the first time in a while that laser-ionized Nd is requested. The goal is to replace the former dye scheme with a TiSa scheme, which as in the past would allow operation with fewer hands-on interventions. The use of the very powerful Blaze laser is also undesirable, due to the non-resonant ionization it produces. So far it has been difficult to ionize the Nd efficiently.
- **Targets**
  - Target #609 (Ta with GdB_6) has already been installed on GPS. The line material requires cautious heating (not more than 600°C).
  - Target #615 (Ta rolls for Li production) has been finished.
  - The next UC_x is in the bake-out process.

Physics and schedule

- The goal of the most recent VITO run on HRS was to commission the beta-NMR program on liquid samples. Due to the incompatibility of liquids with ultrahigh vacuum, this requires a differential pumping system. The late arrival of a chamber necessary for this experiment put a lot of strain on the preparation. Nevertheless, some beta-NMR measurements were possible with ^{26}Na implanted in a crystal and 0.5 mbar pressure. One test performed with an ionic liquid was also successful.
- The following run on GPS addresses the structure of ^{140}Nd. It will be a Coulex experiment aimed at high-energy, non-yrast states, with the goal of identifying which one is a mixed-symmetry state. Both a Pb and a Mo target might be used. The rate of ^{140}Nd one aims at is at least 10^5/s. Aside from the necessary yield, one additional difficulty lies in the contamination of the beam with ^{140}Sm.

Safety

- The observations from the recent safety visit of Olga Beltramello were communicated to Miguel Lozano. One point addresses the presence of flammable material in the hall.
- An RP audit of the hall is prepared, concerning its conformity to the requirements of a class C area. It is good practice in this context to clean-up the access ways, especially of storage boxes. One difficulty encountered already in the clean-up operation has been the refusal of the long-term storage team to take some of the boxes from CRIS.

Visits

- The visit by the Pakistani delegation last week went very well. The visitors were interested in the program of isotopes for medicine and solid-state physics.
- A deputy minister from Vietnam will visit ISOLDE next week on Tuesday (shortly before lunch time).
- Peter Möller from Los Alamos will visit CERN next week (arrival on Saturday, departure on Wednesday morning). He will give two seminars on the occasion, one on Monday afternoon (16:00 in the Council Chamber) and one on Tuesday afternoon (16:00 in b. 508).

AOB

- Next Friday, September 29th, is the European Researchers Night, with a special CERN event organized in the Globe. Activities will commence around 15:30.
- On October 16th there will be a live Facebook Q & A event with ISOLDE (17:00 – 17:45). A rehearsal will take place in advance.
- Negotiations are ongoing to preserve the CERN hostel block booking for ISOLDE. Users gave some feed-back concerning their past experience with this booking. In particular, it was pointed out that the number of booked places is apparently lower than it should because the recommended practice is to first use the normal on-line booking and try to access the ISOLDE-reserved rooms only in case this is not available.

Seminar

- The meeting was followed by the seminar of Nathal Severijns from KU Leuven, with the title “Testing the Standard Model in nuclear beta-decay”.

The next PG meeting will take place on Wednesday, October 4th, at 14:00 in the ISOLDE visitors' room (26-1-022). It will be followed by the seminar of Christine Steenkamp from the Laser Research Institute, Stellenbosch University, South Africa, with the title "Precision laser spectroscopy for astrophysics and nuclear physics"..

Minutes taken by VM