Minutes of the ISOLDE Physics Group Meeting, October 5th 2016

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

Technical news

- **GPS**
  - There was no activity on GPS last week.
  - An update of the controls of the power PLC caused a trip of the target and line heating. The expert had said that it should be transparent, but it was not.
  - The separator was set up beginning of this week for the following HIE-ISOLDE run on ^{80}Zn.
  - In the meantime, there was an intervention on an unreliable Faraday cup in the HIE-ISOLDE tunnel.
  - The HIE-ISOLDE beam diagnostics are unfortunately still crashing.
  - There is a leak on the merging switchyard. Until this problem is solved one should leave open at least one of the valves surrounding the section around the merging switchyard (MSW10_VVS1, GPS20_VVS3, HRS40_VVS1) in order to provide sufficient pumping.
- **HRS**
  - Last week post-accelerated ^{142}Xe was delivered to Miniball (see also physics and schedule).
  - There were no major glitches during the run, except for some vacuum spikes on REX which tripped the LINAC amplifiers. However, the post-acceleration stage required daily retuning.
  - The target started developing a leak on Saturday, which, despite reduction in target heating became gradually worse, until the run had to be stopped around midnight.
  - It is not the first time when a target develops a leak when the 5e18 proton count is reached. The problem might be in the batch of base units – the main building block of the target - used for targets this year. There are still bases from the previous batch which allow investigating this possible vulnerability.
- **REX and HIE-ISOLDE**
  - The 9-gap amplifier was repaired.
  - Efforts are ongoing to improve the transmission, which was compensated by high intensity in the previous runs but for the upcoming Zn run might not be enough anymore.
- **Targets**
  - The tape station was debugged and now seems to be working consistently, based on the performance during the Zn yield checks.
  - A new UC_x target is being finished for next week. It will act as back-up in case there is any breakdown of the target used this week for the Zn run. The unit currently on-line is using a base from the 2010 batch.
- **RILIS**
  - The Zn laser scheme is being set up. There was initially a problem with the stabilization of the UV step, but now it is fixed.
  - Regular cleaning of the optics will be necessary during the run.

Schedule

- The ISOLDE water supply and the machine power supplies will be turned off November 28th. The water will be back January 23rd
- Weeks 48 and 49 will be used for maintenance of the water station. The HIE-ISOLDE cryoplant will be stopped from December 12th until February 2nd

- The class A lab will be renovated and all targets must be removed to the intersecting storage rings on January 7th.
- The first protons for physics will arrive April 24th 2017. Preliminarily, next year's running period will end November 20th (although one additional week might be possible).
- The deadline for document submission for the next INTC is tomorrow night.
- There will be a separator course (or even two) in the two weeks prior to the machine stop.

Physics

- The first VITO tests were successful, beta-asymmetry from a nuclear-spin-polarized beam was observed.
- The Miniball users were happy with the outcome of the ^{142}Xe run. The transitions from the yrast 2^+,4^+,6^+ states were observed, as well as some non-yrast transitions (2^+, 3^-).
- Tomorrow night the second part of the n-rich Zn program is starting, the aim being to study ^{78,80}Zn. In ^{78}Zn the aim is to verify the B(E2;$0^+\rightarrow2^+$) from the past run, increase the precision on the energy of the 4^+ state and determine for the first time the B(E2;$2^+\rightarrow4^+$). ^{80}Zn would be studied for the first time and, having a closed neutron shell (N = 50), would provide invaluable information for shell-model studies.
- The run will last for 4 days on ^{80}Zn and then the change will be made to ^{78}Zn.

Safety

- The ^{140}Gd source which was produced for future detector calibrations was measured by RP and is a factor 3 stronger than initially intended, but still not too much to be worked with, 15kBq.

Visits

- A group of Norwegian students from Radionova and a group of Polish students from Poznan are visiting ISOLDE on Tuesday next week.
- People who are intending to use the visitors' room in b. 508 are asked to check the ISOLDE visits calendar in order not to clash with an already scheduled visit: http://cern.ch/isolde-visits-info/Lists/Calendar/.

AOB

- The help of the people in the local group for the HIE-ISOLDE celebration is greatly appreciated. The guests gave very positive feed-back.

Seminar

- The meeting was followed by a seminar of Dinko Atanasov from ISOLTRAP on *Precision mass measurements of neutron-rich cadmium*.

The next PG meeting will be held on Wednesday, October 12th at 14:00, followed by a seminar by Thorsten Kröll.

Minutes taken by VM