Minutes of the ISOLDE Physics Group Meeting, September 6th 2017

The meeting took place in the visitors' room of b. 508. There were no comments to the minutes of the last ISOLDE PGM.

Technical news

- **GPS/REX/HIE-ISOLDE**
  - The ^{15}C HIE-ISOLDE run continued all of last week on XT03. The only major problem was caused by the frequent trips of the IHS structure. They are related to the water cooling circuit, which is not functioning properly.
  - CA0 elements have still been reported to trip from time to time. This is a problem which affects at the same time the bender in the merging switchyard, irrespective of the separator, therefore it is most likely caused by a glitch of the interlock system. However, nothing is observed on the vacuum system which could indicate this glitch.
  - Currently experts are working on the slow extraction from REX (1.5 ms) which is crucial for the upcoming experiment. This is an experiment on ^{94}Rb at 6.3 MeV/u to Miniball, which is the first HIE-ISOLDE experiment using all the cavities.
  - The CaO target (#613) was replaced by a Ta unit with a Ta line (#565), for collections (see Physics and Schedule).
- **HRS**
  - On Friday, the UC_x target for the upcoming Collaps run on nickel was installed.
- **RILIS**
  - It is a busy week for RILIS. A very ambitious program of laser schemes was planned, starting with Ti on Monday, then Sc on Tuesday, Se currently and Ni tomorrow for Collaps, while providing in the evenings Dy for collections. So far it has worked out.
- **Targets**
  - The CaO target #613 installed on GPS performed well, yields were a factor 2 lower than desired but stable until the end, although the 7.5e18 protons mark was reached.
  - The target #565 installed for collection is a reused unit.
  - Two more targets (#609 which is a Ta unit with GdB_6 line and #611 which is a UC_x with a Re cavity for the rubidium run) are being finished.

Physics and schedule

- The collections/TISD program on GPS has been going on for the last two days. Apart from tests of laser-ionized isotopes (see RILIS section) and collections of laser-ionized Dy, some low-intensity collections for biophysics have also been performed.
- The Dy isotope collections (having in mind the production of the Tb decay daughters) were performed in the framework of the IS528 experiment. No collections were performed for therapy this year, but some collections were performed for different groups such as PSI, NPL and Helsinki for medical imaging with ^{152}Tb or ^{155}Tb. The last collection will take place on Friday morning.
- The biophysics program addressed the collection of lanthanides on various substrates, in order to investigate the chemical separation process, with the final goal of performing PAC on biomolecules.
- In the TISD program, on Ti only stable isotopes (probably source contamination) have been observed. On Sc it was possible to observe radioactive isotopes up to ^{50}Sc, however the V contamination made it impossible to move further neutron-rich. Some surface-ionized beams

on masses of interest for a couple of ISOLTRAP proposals were also investigated during the laser set-up time. A test of Se yields will be carried out later today.

– The Collaps experiment on Ni isotopes aims at remeasuring ^{68}Ni and moving further neutron-rich, while irradiating with protons the neutron converter of the unit. The isotopes ^{69,70}Ni might be reachable, but probably not more. ^{71,72}Ni will be investigated as long-shots. After the completion of the neutron-rich program, the proton beam will be moved to the target in order to investigate ^{56,57}Ni. This means that the proton scan will be performed on the target on Monday morning, time until which only the neutron converter will be used.

Safety

– The collections this week have been surveyed by RP and the feed-back was very positive. A new collection chamber was installed this time, avoiding the need to come in touch with the collected samples, and received the green light for being used (so far it has been working as planned).

Visits

– A visit of Bulgarian high-school students will take place on Friday.
– Hanne Heylen is the new person in charge of ISOLDE visits and she kindly asks to be informed of upcoming visits at least a day in advance.

AOB

– 16th October is the celebration of 50 years of radioactive beams at ISOLDE. The ISOLTRAP office in b. 508 will be used for a social media event.
– There is a new electronic course that team leaders must pass and a considerable number failed the test on the first try.
– There is a scaffolding installed around the ISOLDE restrooms, meant for the repair of the air conditioning pipe above (to avoid future water dripping on the power supplies). A low metal rod passing right under the threshold of the ladies' restroom entrance constitutes a tripping hazard, therefore the restroom should not be used.
– The step ladder of Collaps (labelled as such) is missing. The person who took it is kindly asked to return it to the Collaps team.

Seminar

– The meeting was followed by the summer-student presentations of Ipek Efe, Leandro Sottili and Timo Steinsberger.

The next PG meeting will take place on Wednesday, September 13th, at 14:00 in the visitors' room of b. 508. It will be followed by the seminar of Fredrik Parnefjord Gustafsson from KU Leuven with the title "Channeling effect in ultra-thin monolithic silicon telescopes", as well as the summer-student presentation of Michal Walczak.

Minutes taken by VM