

# Minutes of the ISOLDE Physics Group Meeting, July 05<sup>th</sup> 2017

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

## Technical news

### – HRS

- Last week ISOLTRAP has been taking neutron-rich cadmium beams for the IS574 experiment.
- The run went smoothly, until the last shift, when a faulty controller of an ISCOOL pump tripped the entire power circuit of the RFQ rack. This meant effectively the end of the run (see Physics and Schedule for details).
- There is no spare controller to replace the broken one, therefore at this stage the ISCOOL is running with one pump less, until a new controller is acquired. Tim tested the transmission under these conditions, it is not ideal but sufficient for the beams which ISOLTRAP (the next HRS user) requires.

### – GPS

- Friday last week the first HIE-ISOLDE target for this year ( $ZrO_2$  for Se molecular beams) was installed and heated over the week-end.
- It appears that the off-line bake-out process of the target has reduced the concentration of carbon available to form CO molecules with Se. Most remaining chemistry is probably resulting from target impurities.
- Preliminary yield checks performed yesterday on  $^{70}Se$  were inconclusive, they will be probably repeated tomorrow.
- Since yesterday a large CERN-wide technical stop has been underway, affecting both injectors and the LHC. The GPS set-up will continue after the proton stop. Protons should be available from tomorrow evening, meaning that work will probably resume on Friday.
- A series of Cu collections for IS626, and tests for Bertram, are currently on hold, to be scheduled depending on how the HIE-ISOLDE run unfolds.

### – REX/HIE-ISOLDE

- All 15 cavities were phased and tested over the week-end at  $A/q = 5$  and an energy of 5.5 MeV/u. The test went well, with very few trips recorded.
- The REX setup is going well, so far no major concerns.

### – RILIS

- The ionization of cadmium for ISOLTRAP went very well.
- Currently the lasers are being switched to selenium as a back-up for HIE-ISOLDE, given the difficulties encountered in producing molecular beams. This is challenging because RILIS are missing one chiller.

### – Targets

- A back-up  $ZrO_2$  target is being prepared, to be likely installed next week.
- The production of the target for the HIE-ISOLDE Ba run is on schedule.
- A discussion with the target group is being prepared, concerning the low yields observed in the past runs (Bi and K in particular). The involved teams are asked to provide the yield information they possess.

## Physics and schedule

- The IS574 cadmium run of ISOLTRAP from last week went very well. The yields were sufficient to improve on the results of previous runs, allowing to measure  $^{131}Cd$  with the Penning trap (previously only possible with the MR-TOF MS) and  $^{132}Cd$  with the MR-TOF MS (previously not

possible). A study of the  $^{127,129}\text{Cd}$  isomers with ISOLTRAP was also performed, using the newly implemented PI-ICR technique.

- The IS608 bismuth run from two weeks ago was the first time in which the IDS was used as detection station for the in-source laser spectroscopy program. The possibility to gate on the energy of alpha or gamma transitions allowed obtaining new information on high-spin isomers, which was not possible to disentangle in the previous runs with the MR-TOF MS. Unfortunately, the yields of some isotopes were too low to allow their study. These were isotopes which had been produced and studied successfully at ISOLDE in the past.
- Jenny is away from tomorrow, for the following three weeks. ENSAR forms have been prepared in advance, so that users only need to enter Jenny's office and sign them, when they arrive. A few volunteers are kindly asked to take care of reading out the dosimeters next to her office.

## **Safety**

- No major news to report.

## **AOB**

- Maria is asking for ideas for creating a cover page under which to collect and distribute the ISOLDE Laboratory Portrait articles.

## **Seminar**

- The meeting was not followed by a seminar.

The next PG meeting will take place on Wednesday, July 12<sup>h</sup>, at 14:00. It will be followed by the seminar of Răzvan Lică from CERN and IFIN-HH, Bucharest, with the title „Beta decay spectroscopy at the edge of the  $N=20$  'Island of Inversion' using the ISOLDE Decay Station”.

Minutes taken by VM