

# Minutes of the ISOLDE Physics Group Meeting, November 1<sup>st</sup> 2017

The meeting took place in room 26-1-022. Some comments to the minutes of the last meeting were sent by e-mail by Jose Alberto Rodriguez. He pointed out that the transmission problems reported in the previous week during the  $^9\text{Li}$  experiment were encountered when injecting the beam into the scattering chamber, not along the accelerator chain. The HIE-ISOLDE preparation had been finished already on Wednesday, the remaining time being used on the setup of the physics chamber. No sudden changes on the beam profile were observed during the setup of the post-accelerated beam.

## Technical news

- GPS/REX/HIE-ISOLDE
  - After the proton stop on Monday last week, the  $^9\text{Li}$  experiment restarted on Tuesday evening and continued until Thursday morning.
  - A few trips of the superconducting cavities were reported along the way.
  - The XT03 stripping foil broke right at the end of the beam time.
  - After the end of the Li run, preparations began for the upcoming Hg run.
  - On Friday, during an intervention, it was discovered that the power supply of the PLC in the HV cage was broken.
  - Currently the setup of the Hg run is ongoing. Some problems with the Faraday cups after the superconducting cavities have been reported.
  - The water interlock system was re-adjusted in the racks above NICOLE.
- HRS
  - On Thursday-Friday the setup of Sn beams for Collaps was completed (proton scan, laser setup and yield checks).
  - Some difficulties were encountered with the ISCOOL operation in bunching mode, due to the fact that the He valve had been closed.
  - On Friday afternoon the intervention on the GPS high-voltage power supply also put the HRS on hold. The time was used for RILIS optimization. Unfortunately, the lasers were slightly misaligned, which was only discovered on Saturday. This was caused by the fact that a large mirror was used for the first time for a small laser beam, the position of which on the mirror was much more crucial than had been anticipated. This effectively determined a half-day delay in data taking.
  - Concomitantly, a problem occurred on the cycling application of the 90-degree magnet, where it was discovered that 60 kV is set as high voltage (instead of 50 kV). This was corrected on Friday and occurred again on Saturday.
  - Since Saturday the run went much more smoothly.
  - On Monday the YHRS.QP40-V power supply broke. It was swapped with one of the RB3-RQSB.1200 neg element. Care should be taken to restore the original connection.
- RILIS
  - On Tuesday morning the setup of the Hg scheme for the next HIE-ISOLDE run began. Although initially deemed unnecessary, it was in the end decided that the purity of the beam would be much better with lasers instead of the plasma source.
  - Some tests of the UV schemes for the upcoming neutron-deficient Cu run are also taking place.
  - Preparations are ongoing for tests of Se schemes next week.
- Targets
  - Target #619 (UC<sub>x</sub>) for Sn worked well. It will stay on-line for potential RFQ tests and some collections.

- Target #619 (molten Pb) for Hg is being characterized on-line.
- The ZrO<sub>2</sub> for the upcoming Cu run will be installed on GPS on Monday.
- The SiC target for Mg production is under preparation.
- The upcoming tests of the LIEBE target are looking good, although some coordination is still required. Some tape-station or IDS tests are possible in connection to this target.

## Physics and schedule

- The Sn experiment was made difficult by the technical issues encountered. A first objective was to study Sn isotopes which have already been studied with Collaps, but this time using a different transition, which would allow fixing the A hyperfine parameters. With this information, one could improve the quadrupole moments extracted from the previous measurements. This first objective was accomplished. The second objective was to extend the measurements to more neutron-rich isotopes. However, this was not possible due to insufficient time.
- The following run on GPS is a Coulex study of <sup>206</sup>Hg, situated on the N = 126 shell closure, in which so far only the yrast levels have been determined. The experiment intends to measure negative-parity and higher energy states, as well as transition probabilities.
- At the same time, some Hg collections will take place at GLM, for both solid-state physics (a new attempt to perform perturbed angular correlation studies on atoms in the gas phase). and biophysics (PAC studies on biomolecules).

## Safety

- Due to problems with the transportation of the instructor from Brussels, the ISOLDE safety courses were cancelled this week on a short notice. There is a new proposal to hard link the safety training to the ISOLDE access, therefore discussions will be initiated to have a local ISOLDE person who can act at least as back-up in case the main instructor cannot come for the course.

## Visits

- Two groups are visiting ISOLDE this week. Two smaller visits are also taking place.
- Two guides are still missing for the visit of students from the Czech Republic on November 21<sup>st</sup> (11 AM).
- In January we will have a visit of CEA employees, which should take place in French. Three French-speaking guides would be required.

## AOB

- Next week will take place the ISCC/INTC meetings.
- The Technical Advisory Committee meeting will take place tomorrow. The comments of the committee will be distributed to proposal submitters soon after.

## Seminar

- The meeting was followed by the seminar of Zsolt Podolyak from the University of Surrey, with the title "Role of Nucleonic Resonances in the Population of Excited States in High-Energy Reactions".

The next PG meeting will take place on Wednesday, November 15<sup>th</sup>, at 14:00 in the ISOLDE visitors' room (26-1-022). It will be followed by the seminar of Christian Smorra from RIKEN with the title "A ppb measurement of the antiproton magnetic moment".

Minutes taken by VM