

Minutes of the ISOLDE Physics Group Meeting, July 26th 2017

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

Technical news

– GPS/REX/HIE-ISOLDE

- ^{142,144}Ba beams from GPS were post-accelerated and delivered to Miniball, for a Coulex experiment.
- Setup and operation have gone rather smoothly.
- A CF₄ leak was used to create BaF molecules, which were broken up in the EBIS before post-acceleration.
- The beam was available for users already on Thursday. A bit of retuning was performed on Friday, then the run continued until today.
- The only major problem of the experiment was a failure of the gas injection, which probably became somehow blocked on Thursday and could not be restored to normal operation until the end of the run. As a result, the production of BaF has gradually decreased during the beam time.
- Spontaneous trips of the target and line heating (not necessarily at the same time) continued to occur during the run. They seem not to be related to any vacuum glitch or incident/error in a monitoring system.
- The GPS.FC490 Faraday cup was inspected and seems to be physically damaged. It will require an intervention for replacement.
- The fuse of the tape station burned. Fortunately everything was working again after the fuse was replaced.

– HRS

- The automatic proton scan was tested, already using the HRS target, before the ISOLTRAP ¹³¹Cs run. It is still necessary to better control the starting position, scan range and step size, in order not to shoot the proton beam in a way which could damage the target unit.
- The target #596 for the VITO experiment is installed on HRS and pumping.

– RILIS

- Some maintenance activities have been underway.
- Two new lasers were installed and are working.
- A new air conditioning unit was installed.

– Targets

- The target which is currently on-line is so far performing well.
- It was intended to test for vacuum the target which would be used for medical radioisotope collections beginning of September (#565), but due to a misunderstanding it was not transported to ISOLDE (it is still at the intersecting storage rings).
- An inventory action is underway, due to a number of existing units which were not registered and which could be used either as back-up or to supply the high demand for UC_x targets.
- Joao Pedro has now put together a new – for ISOLDE – technique for the production of CaO, similar to that which was used for his PhD work at EPFL. It will be used to produce nanostructured CaO targets for the upcoming HIE-ISOLDE run on XT03 (still the only ones which can be produced on site).

Physics and schedule

- The $^{142, 144}\text{Ba}$ experiment performed a Coulex study of the octupole collectivity in a region which is well-known for the development of reflection-asymmetric shapes. The observable of interest was the E3 transition probability from the ground state to the first excited 3^- state. Despite the Ba rate continuously decreasing (possibly due to the CF_4 leak problem), it was possible to acquire useful statistics until the end. One complication of the run was the ^{144}Ce and ^{144}Nd contamination. Therefore, one question to verify for future runs is whether REXTRAP cannot be used to purify the beam (with sufficient resolving power) prior to charge breeding. Such purification schemes are routinely used at ISOLTRAP, which uses a very similar Penning trap.
- Next week will take place the first ISOLDE summer-student presentation. The presentations will be approximately 10 minutes long, with 5 minutes for questions. Liam and Vladimir will contact the summer students for scheduling.

Safety

- No news.

Visits

- Not many visits are scheduled for the following two weeks. The largest one is the visit of a group of German teachers on Monday.
- The organisers of the ICIS conference in Geneva would like to bring a group of approximately 100 visitors to ISOLDE in the afternoon of October 20th (as part of a broader CERN visit). Given the large number of participants, it was proposed to restrict the visit to a presentation in the b. 508 visitors' room, without any visit of the hall.

AOB

- Maria repeats the kind request to provide suggestions for a cover of the J. Phys. G "ISOLDE laboratory portrait" special issue.
- Two technicians have been contracted part-time to help with ISOLDE activities. Their names are Francois Garnier and Antonio de Oliveira. Users interested in their services can contact them.

Seminar

- The meeting was followed by the seminar of Marcus Scheck from the University of West Scotland on "Can ISOLDE investigate Pygmies?".

The next PG meeting will take place on Wednesday, August 2nd, at 14:00. Please note that it will take place in the visitors' room of b. 508. It will be followed by the first ISOLDE Summer-Student Presentation, by Rano Rahman.

Minutes taken by VM