

# Minutes of the ISOLDE Physics Group Meeting, September 21<sup>st</sup> 2016

## Technical news

### • GPS

- The HIE-ISOLDE run on  $^{110}\text{Sn}$  was interrupted on Tuesday last week for the technical stop.
- The controls update which took place during the technical stop turned out not to create major problems for ISOLDE.
- It was however difficult to get the beam back to MINIBALL for continuing the beam time. First of all the protons were back after the technical stop only on Thursday night at 9 PM, due to various problems on the booster side. With the time required for setting up the accelerator, the experiment only resumed at around 1 AM.
- The MINIBALL run on  $^{110}\text{Sn}$  continued uninterrupted until Saturday, when a CERN-wide power cut brought the experiment to a halt. The high voltage and the target/line heating dropped on both separators. There were problems getting the high-voltage power supplies back on-line. One of the power supplies was replaced by the specialist.
- Sunday morning the 9-gap amplifier broke. The cause is not fully clear and the problem is being currently investigated. This ended the  $^{110}\text{Sn}$  experiment.
- A used Ta target was installed on GPS on Monday, to be used for collections (see Physics and Schedule). The proton scan and separator setup were performed the same day, to allow the immediate start of the collections.
- It was noticed that there is a mismatch between the proton-current value calculated by ISOLDE and by the booster. The booster value is higher than the ISOLDE value. This is being looked into.
- Currently the separator setup is being redone because it seems that the stable beam is very difficult to transport to VITO.

### • HRS

- The target to be used for the Xe run was installed on Thursday last week and the separator setup was performed by Friday afternoon.

### • REX and HIE-ISOLDE

- Specialists are currently working to solve the 9-gap amplifier problem with the aim of having the physics program back on Friday. In parallel, the amplifier used last year is being prepared as a backup.

### • Targets

- The target production for the Zn HIE-ISOLDE run ( $\text{UC}_x$  with quartz line and neutron converter) is on time.
- Unfortunately the class A lab requires major renovation because a safety inspection has concluded it is non-conform. The renovation will cause an interruption of its utilisation beginning of next year, which could impact the production of  $\text{UC}_x$  targets.

### • RILIS

- The ionization of Sn went smoothly until the end of the beam time.
- The users are again reminded to communicate with RILIS concerning long interruptions in beam utilisation which could allow turning off the lasers.
- The final set up of the Dy ionization scheme for GPS collections could only be performed with protons. The scheme was thus not fully optimized by Monday night, but in the meantime the optimization could be finalized.

## Physics and schedule

- On GPS there is an on-going program of collections of Tb isotopes for medical applications. The collections employ the laser-ionized, beta-decay Dy mothers of the isotopes of interest.
- For the first time, the collections use a WDR plan, which allows better tracking of the dose received during the experiment (similar to the way front-end interventions are planned). This will become the standard for future collections. So far, the measured doses are below expectations.
- The shipment of collected samples takes place in the morning, when users are advised to avoid the GLM area.
- The MINIBALL experiment studied  $^{110}\text{Sn}$  for the first HIE-ISOLDE run of the year. The main goal of the experiment was to determine the  $B(E2; 2^+ \rightarrow 4^+)$  value. MINIBALL will continue once the 9-gap amplifier is fixed with the study of Coulomb excitation of  $^{142}\text{Xe}$ .
- The preparation of VITO is going on very well, everything needed has been installed over the past few weeks and now stable beam tuning was performed, leading to 95% transmission to the beta-decay point. The first planned on-line test will attempt the polarization of Na beams.

## Safety

- Measurements of the dose rate at MINIBALL during the previous run showed levels below  $1\mu\text{Sv/h}$ .
- As previously reported there were higher-than-usual radiation levels close to the merging switchyard and REXTRAP during the MINIBALL run. Additional shielding was installed to reduce the background radiation level, as well as signs to warn the users.
- There was a CERN safety circular concerning the recent breakdown of two brass non-return valves. ISOLTRAP uses such valves for the helium recovery lines of the superconducting magnets and will investigate if it applies to their specific situation.

## Visits

- On Tuesday at 11:30 there will be the visit of the president of the Spanish National Research Council.
- On Wednesday there will be the HIE-ISOLDE celebration, which includes a visit of the ISOLDE facility in the afternoon by around 70 people. The visitors will be divided in three groups, which will be accompanied by Maria, Karl and Mark Huyse. Nevertheless, they must still be divided into smaller groups for visiting the lab. Volunteers are needed to help out with the visit.

## AOB

- The next separator courses are tentatively scheduled for the week starting November 14<sup>th</sup>.

## Seminar

- The meeting was followed by the summer-student presentation of Monika Piersa from IDS with the title "Commissioning of the IDS neutron detectors and beta-decay fast-timing studies at IDS" and the seminar of Christiaan Vermeulen from PSI on "Results from IS528 rare earth collections for Theragnostic applications."

The next PG meeting will be held on Wednesday October 5<sup>th</sup> at 14:00, followed by a seminar by Dinko Atanasov from ISOLTRAP.

Minutes taken by VM