

Minutes of the ISOLDE Physics Group Meeting, June 14th 2017

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

Technical news

– HRS

- The Faraday cup in front of the ISCOOL was repaired before the Collaps run, but it still does not work very well (YHRS.BFC690).
- There were also problems with the cooler itself, it seems that the optimal amplitude for some masses is in a range which overloads the amplifier. This problem affected the Collaps run and is currently also affecting the CRIS run.
- The technical stop which followed the Collaps run took longer than expected due to a test of the 400 kV power line.
- The HV on HRS has been set at 40 kV and for now this is the maximum value for which a standard tune exists with bunching in the ISCOOL. It is envisaged to prepare settings also for 50 kV.
- Collaps finished their beam time on Tuesday, which was followed by a Mössbauer run on GPS.
- Last week the beam on HRS was found again shifted and significantly wider. It is still not clear what the cause of these shifts is.

– GPS

- Since the front-end HV power supply broke on GPS, it was difficult to anymore go above 30 kV. Initially the front-end was only holding 30 kV, but with a bit of conditioning it was possible to go up to 40 kV, still less than the ideal for the Mössbauer run, which would have been 50 kV. The GPS extraction electrode is a possible source of the problem, but no intervention is planned yet before the HIE-ISOLDE period. For now, it will be attempted to use the maximum voltage that the front-end can be conditioned to.
- Last Wednesday there was a problem with the front-end-interlock PLC, which gave a false interlock signal, shutting down a lot of systems, including the target/line heating and the front end vacuum.
- The line and target still trip spontaneously - but not together - from time to time, without an obvious reason.

– REX/HIE-ISOLDE

- The beam has been taken though the third cryomodule and so far things are looking OK.
- Currently a realignment of the cryomodules is ongoing.
- The mounting for the ISS experiment has arrived and is currently being put in place.
- The crane for the scattering chamber was installed and the height was adjusted. During the installation it was noticed that the hook was being hanged onto the survey point nearby. The survey points should not be used to hang objects, as any deformation might affect the references for future alignment work.

– Targets

- The target production is on-schedule.
- The UC_x unit for the bismuth beam time is ready, it only requires to be filled. The quartz line unit for ISOLTRAP is also almost ready.
- Finally, the carbon nanotube target failed, as the chemistry did not work (the fluorine attacked the material of the target container), and further diagnosis is ongoing

- Strong CaF contamination was observed in the IS606 run, on mass 59. This could be contamination coming via the pumping system on the off-line separator.
- **RILIS**
 - RILIS had a difficult week-end, starting with an air-conditioning issue, which made it very difficult to stabilize the lasers and required constant supervision. One of the water chillers also broke, which required the RILIS operator to intervene during the night, thus not having him available for the next day's stabilization work.
 - A number of times users reported problems with beam intensity and called RILIS for optimization. In the climate of doubt on RILIS operating conditions, it is possible that other problems (eg. beam transport) might have been overlooked.
 - It is very important to have an experienced team member in the night shift, for troubleshooting obvious problems. In one instance the laser operator was called to check the lasers although the beam gate had been left closed.

Physics and schedule

- During the Collaps run the aluminum yields were about a factor ten lower than in the previous year. This hindered the attempt at the most challenging (and new) cases. Additionally, the laser line width (which had been a problem in the previous year) could not be improved.
- The ISCOOL hands-on course was not really hands-on, because of the large number of participants. It was a continuation of the discussion started in the physics group meeting, going again over and detailing some of the aspects of the ISCOOL operation. Users are encouraged to talk to Tim directly for more specific projects or requests.
- The Wisard magnet was cooled down and powered and the operation went relatively smoothly. So far the magnet is at 4K temperature and is energized to a field of about 3 T. Until the end of the week it will be energized to the full 9 T, then will be de-energized and allowed to warm up. The energization will be repeated towards the end of the year. It was stressed that the magnet does not pose problems for safety, but can affect beam transport to HIE-ISOLDE.

Safety

- In the last weeks the safety team has been monitoring collections. A certain procedure has been developed in order to approve the collection program, however so far the procedure is still a bit heavy and impractical and probably still requires refinement.
- It was reported by several users that the interaction with the safety team has sometimes been difficult. It was emphasized that, while safety is an obvious priority, it should be kept within the boundaries of common sense and civility.

Seminar

- The meeting was followed by the seminar of Gwenaelle Gilardy from Notre Dame University on "Studying (α,γ) reactions at Notre Dame"
- Next Thursday ISOLDE will receive the visit of Prof. Daniel Shaddock from the Australian National University/ Liquid Instruments. He will present a new product of his company and also give a seminar on "Detecting gravitational waves from the ground and space", which will take place at 16:15, in the Filtration Plant (222-R-001).

The next PG meeting will take place on Wednesday, July 5th, at 14:00. It will be followed by a seminar by Chloe Malbrunot from CERN with the title “Antimatter studies at the CERN Antiproton Decelerator”

Minutes taken by VM