ISOLDE Physics Group Meeting 12/09/2018

Technical news

- **GPS**
  - End of Be run was a success at XT03.
  - Mn run for SSP starting today.
  - QS30 at GPS frontend has a short-circuit but the beam seems to still be ok for now.
  - No intervention possible because it is on the front end.
  - Old tape station used this week following its repair.
  - Central beam line is free during the weekend so comparisons with old/new tapestation to be used.
  - Na yields on this target are good, but Mn beam affected by lasers. Seems to be under control.

- **HRS**
  - Switch to $^{134}Sn^{34}S$ for Miniball.
  - Commissioning of the new tape station went well.
  - Beam to Miniball at 9pm on Wednesday, with optimisation till the night.
  - Saturday evening a switch to ^{132}Sn due to a lack of yield.
  - A lot of problems and interventions to try to get some physics.
  - Target failure on Sunday morning finished the experiment.
  - New HRS target going online this afternoon (brought forward from Friday).

- **REX/HIE**
  - Tripping of cavity 4 in second cryomodule started on Wednesday.
  - Rephasing of the whole machine from that point to skip the cavity.
  - Resulted in a lower beam energy.

- **Targets**
  - #641 UC Ta for Mn beams and surface ionised collections is being setup today.
  - #623 SiC for Mg beams to ISS and T-REX will go online this afternoon
  - UC for COLLAPS Sb run is being worked on at the moment. All targets till mid-October are under control.

- **MEDICIS**
  - *Collections last week for Tb-149. The elemental 149Tb is well produced but heavily contaminated (as is the case at ISOLDE). The supposedly cleaner TbO is not produced in very high quantities. .*

Physics

- **Miniball**
  - $^{134}Sn(d,p)$ using T-REX.
  - First spectroscopy of ^{135}Sn.

- Optimisation using stopper foil at Miniball to measure the decay and obtain yields for target optimisation.
- 2000 ion/s at the maximum, but only went down after Sebastian's intervention.
- Ionisation chamber calibrated with ^{134}Xe and ^{181}Ta thanks to Alberto.
- Contamination ^{134}Xe, ^{168}Yb and A~158 observed.
- Some ^{152}Sm also came at some point, but overall not much ^{134}Sn.
- Very low statistics and two different beam energies used.
- To extract results will be very very difficult.
- Switch to ^{132}Sn on Saturday gave $2x10^4$ ions/s, which was low but enough to get results if the experiment ran for 3-4 days.
- Sadly the target broke on Sunday morning…

- **SSP - eMS**
  - Be run for the first time in 6 years.
  - Gallium nitride implantation, to measure lattice positions of different dopants.
  - Low temperature data to go with previous high temperature runs.
  - Comparison to Mg shows promising results of Be interstitial site ratios.
  - Next experiment is lattice location of Mn in germanium telluride.
  - Exploratory experiments in calcium fluoride that feeds in to the ^{229}Th letter of intent from the Leuven group.

- **SSP - Mossbauer**
  - About 6 experiments running next week to complete a number of shifts.
  - All data taken online, so not collections.
  - Running until Monday at 4pm when protons stop for technical stop.

Other business

- **Visits**
  - LHC-HL newcomers this Friday (09:30-11:00). Guides are Maria and Simon L. 12+12 people. GLM to communicate about collections.
  - EMIS visit on Friday next week. Guides and scheduling to be discussed between those who have already volunteered.

- **Safety**
  - RP found a small hotspot at RA0 (10-20 μSv/h).
  - New training catalogue gone live from last week, combining CTA and SIR into a single application.

- **EMIS**
  - Starts next week, Monday to Friday.

- **A.O.B.**
  - No physics meeting next week during the conference.
  - Researchers night (Friday 28th September). Final chance for volunteers, list to be submitted tomorrow.

The meeting was followed by four Summer Student Seminars:
"Beamline simulations and detector studies for the WISArD experiment" – Lukas Nies.
"Perturbed angular correlation in bismuth ferrite" – Georg Marschick.
"Gas flow simulations for a Paul trap in MIRACLS" – Clemens Friedrich Frubose.
"A random walk through the ISOLDE solid state physics programme" – Jarla Thiesbrummel.

There is no meeting next week.

Minutes taken by LPG