

ISOLDE Physics Group Meeting 26/09/2018

Technical news

- **GPS**
 - Collections of $^{228/223}\text{Ra}$, ^{133}Ba and ^{212}Po . Mostly for sources.
- **HRS**
 - 28Mg to Miniball for T-REX run.
 - PS Booster problems, specifically a burnt controller for a power supply.
 - The spare was tested but had old (>10 years) firmware that meant it wasn't stable when switching frequently.
 - A workaround was found where HRS pulses were bunched together in the supercycle and this allowed stability at a slightly lower p+ current.
 - Secondly a screen fell down into the proton beam causing scattering. It was not clear from the CCC but eventually spotted by (Sanchez?) and retracted manually during an intervention.
 - QP180-NEG trips, caused by the power supply, which had to be reset by hand multiple times during the run (once per day).
 - Tape station tests during setup proved consistency of yields.
 - Fast tape station was able to measure down to 21Mg and get a release curve of 200 ms.
- **REX/HIE**
 - Venting of Miniball, but fast valves worked as expected and cryomodules were safe.
 - IH-structure drifted on Monday evening but the cause not known. Took a long time to diagnose, transmission through linac dropped (suddenly or smoothly? – Miniball to confirm from data).
 - Cavities are performing very well with almost no trips during the run.
 - All cavities are on and using the maximum beam energy of HIE-ISOLDE.
- **Targets**
 - #623 SiC for 28Mg beam to HIE-ISOLDE working well on HRS.
 - #688 for HIE-ISOLDE on hold for Miniball.
 - #619 Molten Pb for SSP and later HIE-ISOLDE on GPS now.
- **MEDICIS**
 - Irradiation on Wednesday ^{149}Tb for CHUV with and activity of 1-2 MBq.
 - Smooth operation and the chain of events for shipping went well.
 - Collected on salt which is difficult and procedures need to be improved.
 - RP issue when collecting, too many people in the room.

Physics

- **Miniball**
 - $^{28}\text{Mg}(t,p)$ @ 9.43 MeV/u using T-REX.
 - Studying the two-neutron transfer to ^{30}Mg .
 - Physics of the Island of Inversion and the N=20 shell gap.

- Aim to probe the population of the excited 0+ state.
- Previous studies with $^{30}\text{Mg}(t,p)$ at 1.8 MeV/u at REX-ISOLDE.
- $1.5\text{E-}6$ ions/s on target with a very stable beam over time.
- Lots of data with open reaction channels, with lots of analysis to come.
- **ISS**
 - $^{28}\text{Mg}(d,p)$ @ 9.43 MeV/u using T-REX.
 - Studying the one-neutron transfer to ^{29}Mg .
 - Nice synergy with the Miniball experiment in terms of the physics.
 - Beam sharing was possible during the setup to maximise the efficiency.
 - Aim to measure excitation energy spectrum in ^{29}Mg .
 - Beam tuned through a 3mm aperture at ISS so very good beam-spot size and nice intensity.
 - With these conditions and a thin target (80 mg/cm²) an excellent resolution is expected in the excitation energy spectrum.
- **SSP**
 - $^{57}\text{Mn} \rightarrow ^{57}\text{Fe}$ for Mossbauer spectroscopy last week.
 - Went very very well, with many experiments ticked off.
 - Smooth runs with a decent beam intensity.
 - eMS on GHM looking at lattice shifts at different Mn concentrations (Karl).
 - This week it is $^{199\text{m}}\text{Hg}$, which is just starting up.

Other business

- **Visits**
 - Dutch/Flemish teachers program this Friday (guides assigned).
 - Spanish students also on Friday (guides assigned).
 - Two more visits next week that guides, so please volunteer.
 - EMIS visits went well, people were positive and guides were on time.
- **Safety**
 - Fire alarm was not audible at ISOLDE, in the control room or the hall.
 - The fire brigade knew about it, because they came. To be implemented.
 - Safety training catalogue is difficult and has teething problems.
 - Registration of new users is a mess, not accepting people who are not fully registered at CERN.
 - To enrol, just keep emailing them at safety-training@cern.ch.
 - Training ranks are not being updated quickly, so new users cannot get access quickly. Maybe redirected to a “supervisor” for signature.
- **EMIS**
 - Thanks from Gerda to everybody that helped.
 - Positive feedback from many participants already, congratulations.
 - Proceedings procedure has been sent out. Can the local people please test the system by starting the submission of their contribution?
- **A.O.B.**

- Researchers' night this Friday 28th September.
- ISOLDE is in a little tent on the esplanade des particules!

The meeting was followed by four Summer Student Seminars:
"Characterisation of a pepper-pot emittance meter" – Ove Hansen.

There is no meeting next week.

Minutes taken by LPG