

Minutes of the TITAN Meeting

Held on the 16th of February, 2009

Present: Maxime Brodeur, Thomas Brunner, Paul Delheij, Jens Dilling, Stephan Ettenauer, Aaron Gallant, Melvin Good, Alain Lapierre, and Ryan Ringle

EBIT

The last efficiency measurements yielded the following results

Li+: 35%

K+: 22%

(whereas the number of counts on the MCP0 were compared for a beam being trapped in the EBIT and a beam shot straight through the switch yard). In principle there should not be a difference between Li and K, but it could be that the EBIT trapping potential is lowered too late during injection.

A scan by the slits-assembly resulted to a beam size of about 2 mm in y-direction and 3 mm in x-direction.

Plans for this week:

- x) efficiency measurement in different mass region
- x) charge breeding
- x) x-ray yield as a diagnostics tool for charge breeding

Lifetime Measurements

A new data point was added to the existing ones. More will be done as well as a measurement for a higher mass.

EC-BR

Thomas is investigating the resolution of the Ge-detectors with and without magnetic field. He also talked with Chris P. how to efficiently test the tig10 frontend and optimize tig10 parameters. Possibly, a new energy calculation algorithm will be implemented for the LeGe detector.

In the middle of next week Thomas and Stephan will compare their independent analysis of the first test run.

MPET

Investigations of the TOF between RFQ extraction and MCP0 showed that the pulse drift tube (after the RFQ) was pulsed down too early, which would explain why the system was so sensitive to the pulse drift tube height in the past.

Now, the timing is set as such that the pulse drift tube is pulsed down when the ions are in the center of the tube. In this configuration the applied voltage changed by 100 V compared to the previous setting

Test of the field corrections were performed with dipole RF and are now continued with quadrupole RF to see if there is a dependency on the center frequency for different RF voltages.

Maxime noted that the signals of the MCP after the MPET are smaller than in the past. In some cases they are now difficult to distinguish from oscillations present on the signal.

The origin of these oscillations (with frequencies 720 kHz, 790 kHz, and 890 kHz) was identified as the trapping and correction power supplies controlled (or supplied) by a VME module. The peak-to-peak voltage of these oscillations (after amplification) is comparable in some cases to the RF field applied to the ring. An initial trial to filter out these oscillations via a low-pass filter failed because it increased the switching time to about 4 μ s. It is planned to talk to Pierre Amaudruz about this issue. Additionally, we also saw oscillations in the higher MHz range and around 100Hz.

RFQ

The gas bottle was replaced last week only after a month of being used. Currently, we are running with a lower gas flow and new bottles were ordered.

CPET

Magnet will be shipped (in cold state) in the next week(s).

The platform is planned to be extended by a regular balcony. Mel's current design of the new beamline would fit into this space (including the Daly detector). The beamline would include MCPs after and before the CPET (in MCP holders as used in the switchyard). There will also be a pump before and after the CPET.

Discussions with Rick will be arranged.

Beam Schedule:

Apr 1- Apr 7: Be12

~ June 11-15: discretionary beam time during beam development (involves HCI)

July 16- 20: Cs126 for double beta tests (detectors and trapping)

Aug 22-26: Laser spectroscopy Li11

Sept 11-15: tba (involves HCI)

For HCI tuning and diagnostics methods (e.g. PIPS) need to be developed.