TITAN Meeting Minutes
May 20th, 2009

Highly Charged Ions

- Maxime was trying to measure the mass of protons. Try to get bare oxygen by the end of the day. TOF resonances were seen.
- Efficiency of extraction: Sometimes there are two peaks in TOF on MCP. The peak spacing depends on the settings used. Will need to spend some time after the conference to understand this.
- Right now we set the bender and play with the steerers to get out of the switch yard.
    - A signal of 2mV on the MCP is good enough for a measurement in MPET
- It is possible to clean the beam in the EBIT, but probably better to do this in the MPET

CPET

- MCP Replacement Vacuum Chamber work order 37859.
- Currently using borrowed turbo. Planning on buying one.
- EBIT doesn't need an RGA all the time (will need to warm up for a week to remove it)
    - RGAs will be used on a frequent basis, since vacuum will begin to be an issue.
    - Could we use a setup similar to Thomas' to move the RGA around?
        - Would need a 70L turbo. Can this be movable as well?
- If the vacuum is good than the tube can be placed in the magnet. Timescale ~1 month.
    - We may be able to borrow in RGA from the vacuum group for now.
    - We also have a Convectron controller that we could use.
- Simulations:
    - Beam properties out of the CPET
    - Rick will simulate from the EBIT to the CPET. None for extraction, since that should be fairly simple.
    - May need to bias the CPET trap to at least 500V.
        - The feed-throughs are rated to 5kV
    - Can we use the same set-up as in the EBIT? (Bias at 2kV)
    - Rick would also like a running beam tune to compare.
- Would like to have about 10" before the CPET somewhere.
    - The Wien filter is < 10"
- The minimum distance between ground is 40kV(1mm). Can take thickness off the plate so the gap goes to 1.5-2mm.
- The electrode at CPET will be Ag and Au plated. There will be 2 segmented electrodes.

EBIT Offline Source

- The structure needs to be stronger because of torque from vacuum is too much.
- Things are still moving.
- Try to get order out by Friday

Beamline

- Vacuum restrictors being conditioned right now.
- The current work orders should be done by June 1st

Branching Ratio Measurement

See Thomas' attached “Dream Castle”

Other

- The concepts for limit switches are mostly done.
    - We should probably wait to submit these since we already have a lot of order in the design office.

My Dream Castle

Or what I would like to happen before the next beam time

β detectors

- Design source holder for the Bi207 source to mount it in front of the PIPS detectors to test them on the platform within the system with the tig10
- Order spare PreAmp for PIPS
- Change electrical connections of the PIPS detectors
- Modify linear feed through: add limit switch and magnets to fix position of PIPS detector when extracted
- Calibrate PIPS

X-ray detectors

- Test Al window
- Design source holder for Al window to allow calibration of LeGe
- LeGe: get handle on transistor reset and double triggering
- Gating of tig10
- Combine front end long before beam time
- Compare tig10 with DSPEC and optimize tig10
    1. Achieve comparable energy resolution
    2. Achieve comparable lower thresholds (get threshold below 15keV)
    3. Compare efficiencies

Systematics

- Storage time with different trapping depths, especially deep trapping
- BGND measurement with both X-ray detectors before and after run (1 week each)

Beam Time Preparation

- Adopt e-log to our needs
- Shielding of Ge detector (check activity of lead before)
- Timing scheme (trapping and detection)
- Online analysis tools (spectrum viewer and check if beta signal and check anti-coincidences)
- Test anti-coincidences off-line with 207Bi source
- Sideband cooling

Week 21
Test Al window
Hand drawings to machine shop
Test gating and several detectors with tig10

Week 22
RNB

June

Week 23
Change electrical connection of PIPS detector
Modify linear feed through

Week 24
Install Bi207 source on PIPS inside EBIT vacuum system
Test anti-coincidence of electrons and gammas
Finish front end

Week 25
Finish trapping cycle

Week 26
Finish setup for beam time

Week 27

July

Week 28
BGND measurements with LeGe and Ge detector

Week 29
Online Beam Time

Week 30
Online Bea, Time

Week 31
BGND measurements with LeGe and Ge detector