Bo Report 11/26/12

Ben Jones

PMT Problems

- Teppei and I determined that the PMT has become disconnected inside the cryostat.
- This forced an argon dump and re-opening.
- We will investigate what happened – but Billy reports that the pin-socket PMT connections on darkside have also been found to disconnect when filling
- This may make us change our strategy for connections to MicroBooNE PMTs.
- Will report back when we know more.

Other Developments

- Since we will open this week, I will install one of Adam Para's alpha sources before next fill.
- Nitrogen line engineering work has begun.
- Capiliary tubes for liquid sampling will be installed during this opening
- When we close, we hope not to open again until ~February. So important to be careful to get everything right (and accurately measured, etc)

HV

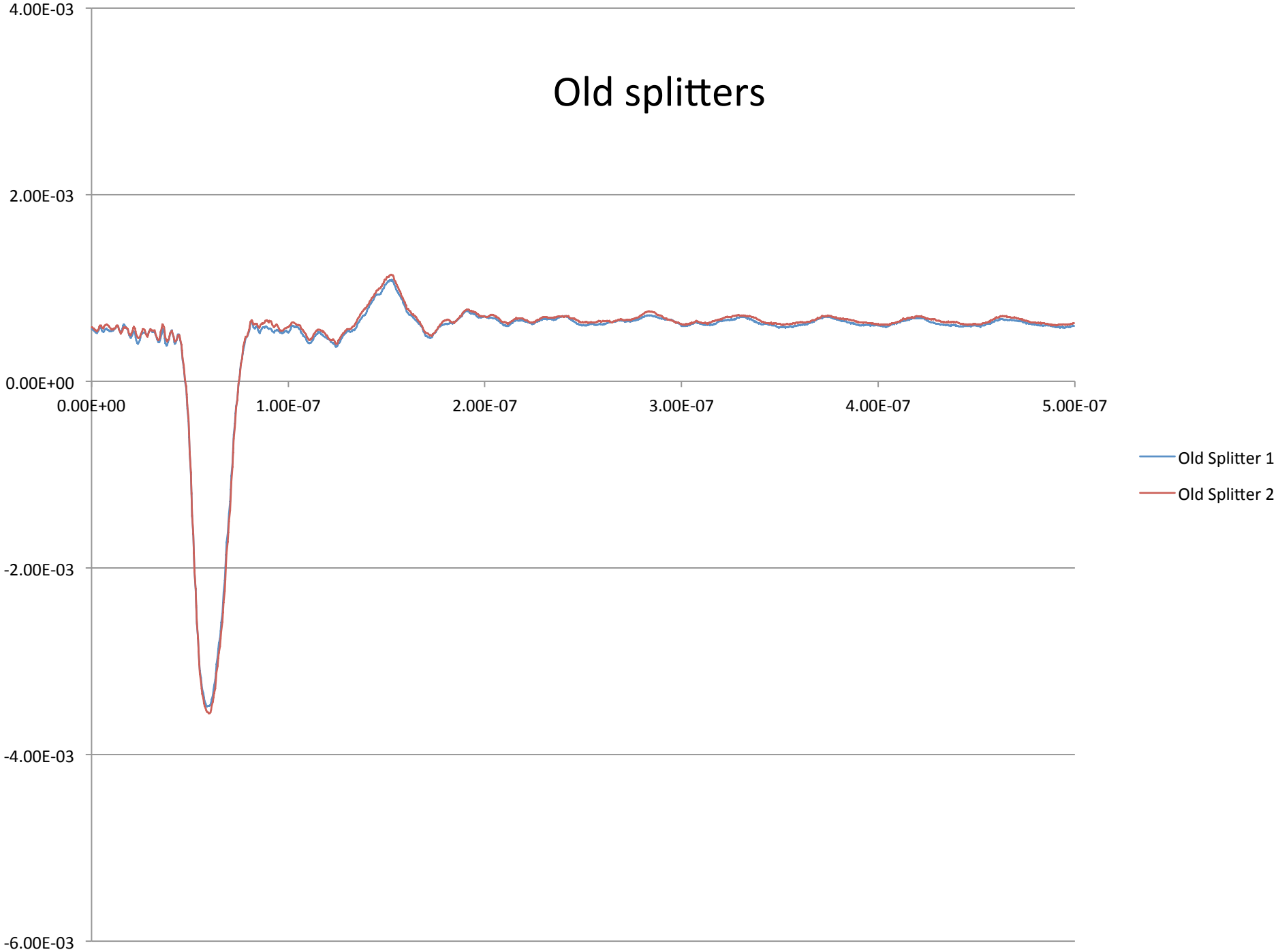
- EPICS HV interface updated to modify command dictionary to allow software clearing of interlock trip
- With help from Gennadiy I will test this out this week
- Linda and I hope to assemble complete ORC documentation by the end of this week – we may need quick response help from others, please help us out if you can!

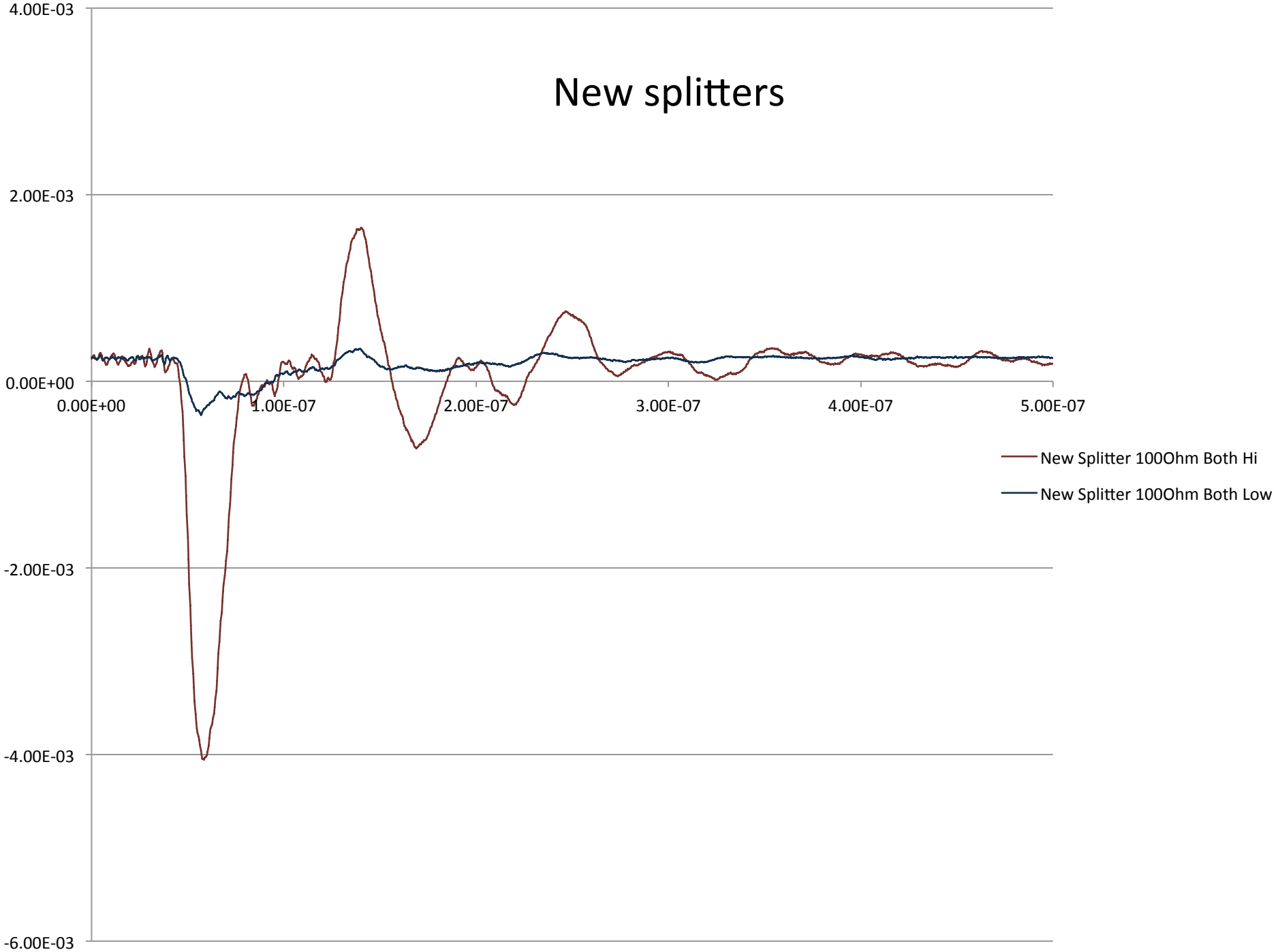
Readout Exercise

- Ben and Matt checked that readout still worked after ORC recabling
- After some initial problems, got things up and running.
- Update readout code allowed us to reach higher rates. 20Hz now achievable.

Splitter Characterization

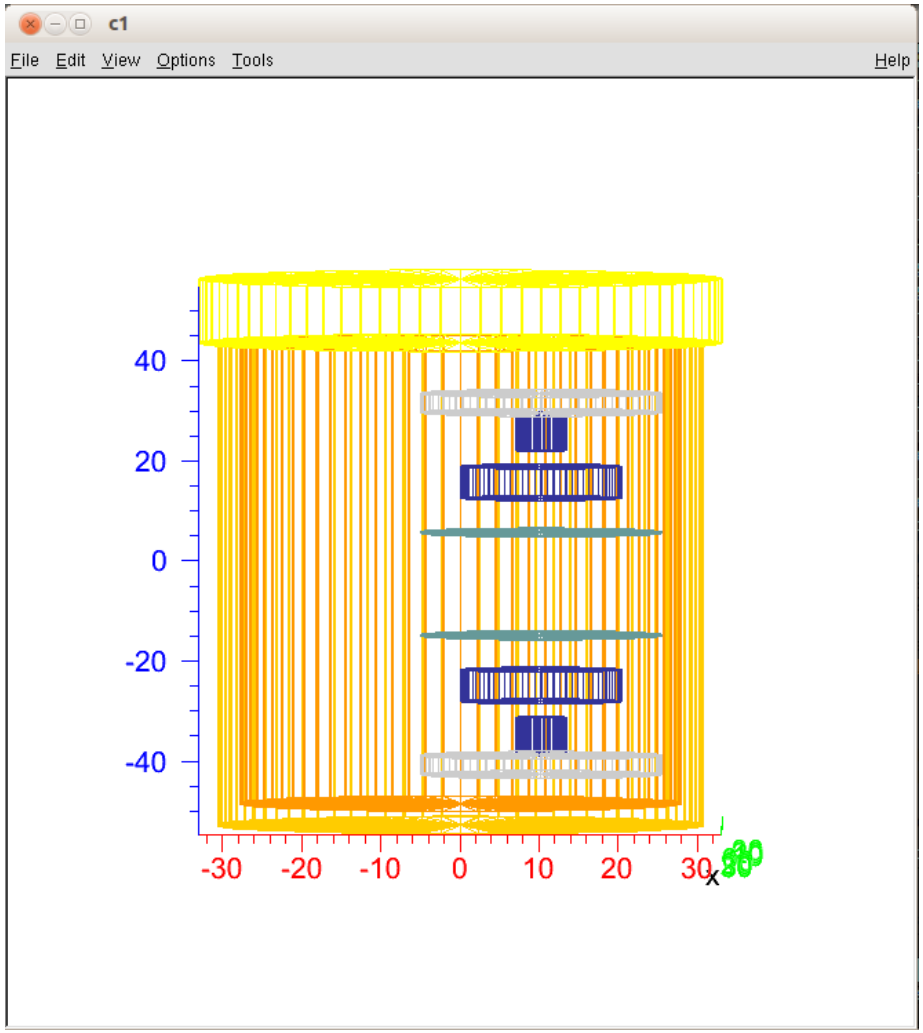
- We used the little Bo uptime we had to work on characterizing the new Hi/Lo splitter.
- Some impedance matching problems which should be fixed for next iteration – but Hi/Lo seems to work with gains as expected.

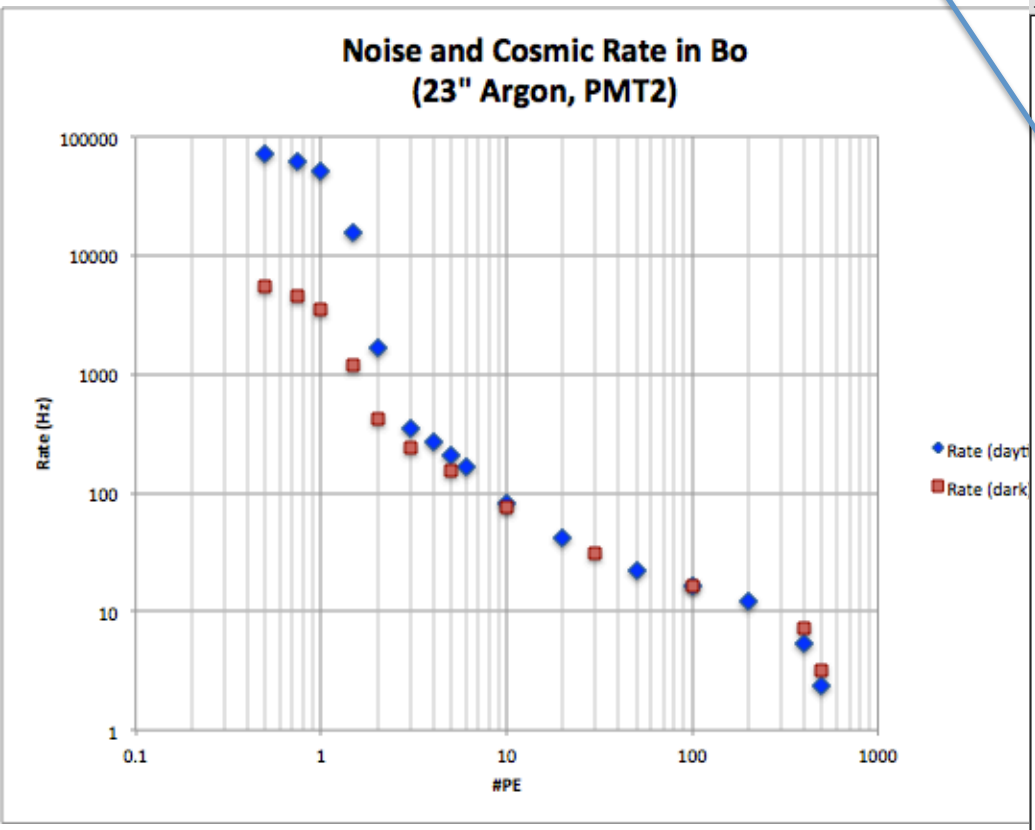

Old splitters
4.00E-03
2.00E-03
0.00E+00
-2.00E-03
-4.00E-03
-6.00E-03
0.00E+00
1.00E-07
2.00E-07
3.00E-07
4.00E-07
5.00E-07
Old Splitter 1
Old Splitter 2

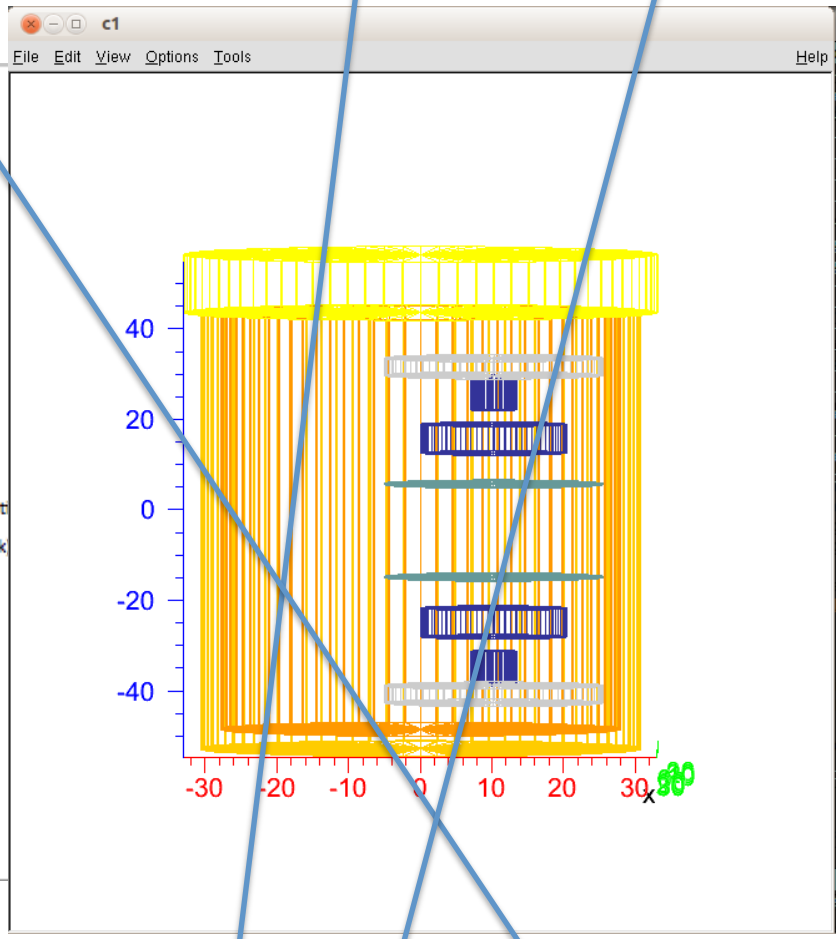

New splitters
4.00E-03
2.00E-03
0.00E+00
-2.00E-03
-4.00E-03
-6.00E-03
0.00E+00
1.00E-07
2.00E-07
3.00E-07
4.00E-07
5.00E-07
New Splitter 100Ohm Both Hi
New Splitter 100Ohm Both Low

LArSoft and Bo

- Christie ramping up on Bo work – see beautiful geometry
- With Matts help I plan to implement LArSoft processing of readout data for algorithm testing
- By comparing simulated to real cosmic response I hope we can extract global QE for one PMT assembly




Noise and Cosmic Rate in Bo
(23" Argon, PMT2)
Rate (Hz)
100000
10000
1000
100
10
1
0.1
1
10
100
1000
#PE
Rate (dayt
Rate (dark


c1
File Edit View Options Tools
Help
40
20
0
-20
-40
-30
-20
-10
0
10
20
30
x