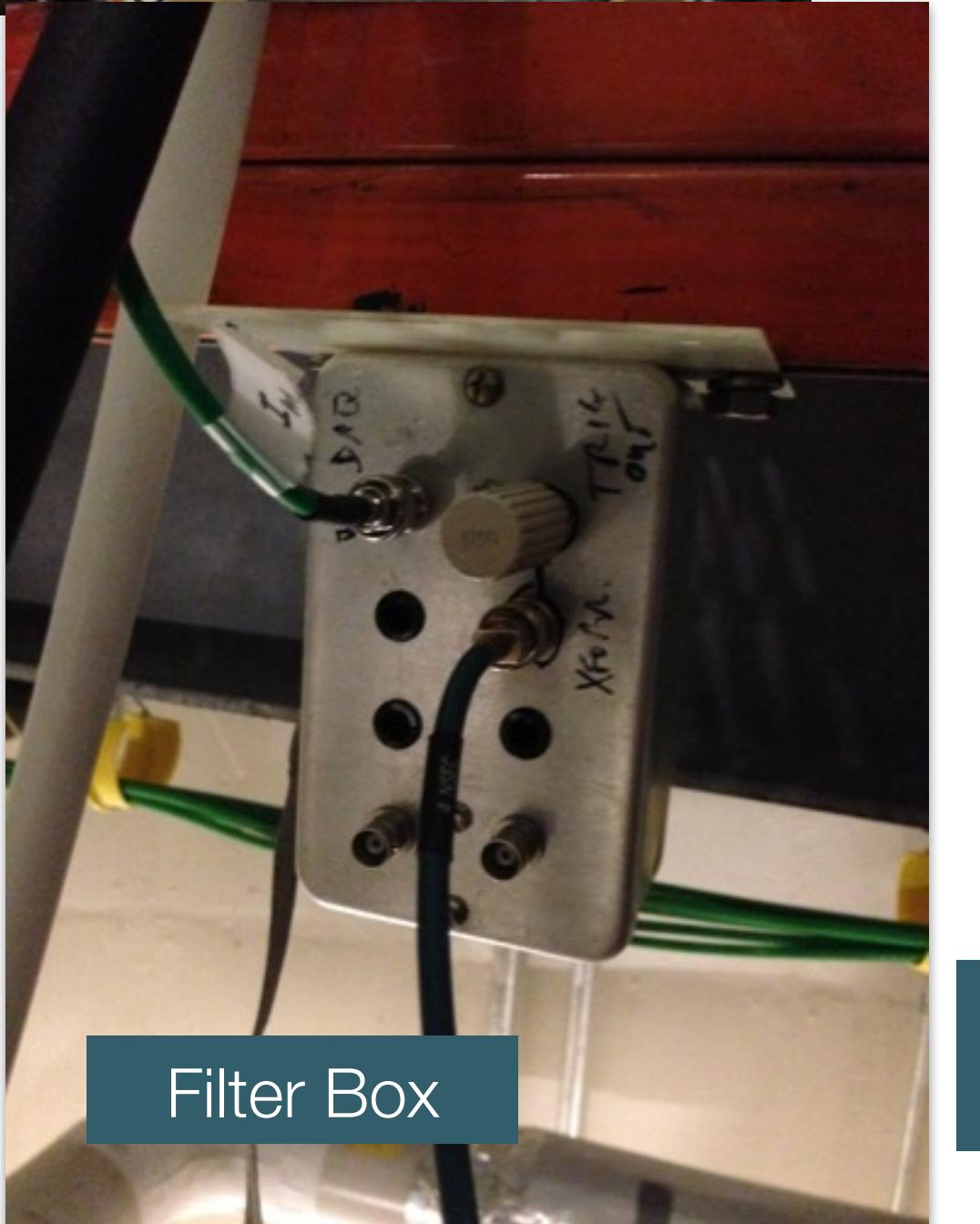
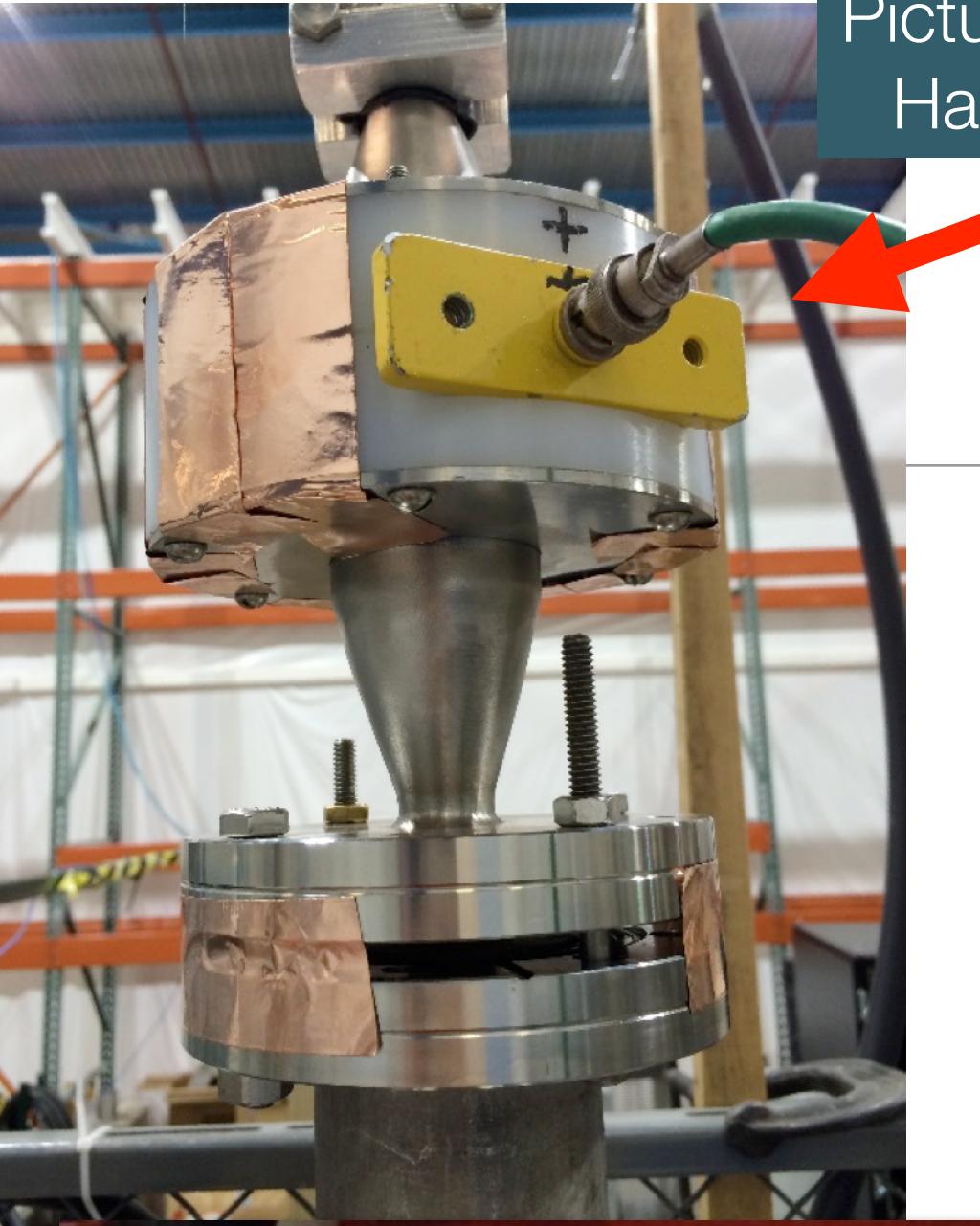


MicroBooNE HV Cable Change

Cable + Toroid for MicroBooNE

- Hans gave a talk at the status meeting on 6/26 describing some current monitoring options for MicroBooNE — one of them was a commercial toroid
- I gave a follow-up talk on 7/17 describing the options a bit more
- After a safety review, we installed it in MicroBooNE
- The output was connected to a scope set to trigger on a pulse.
- It was noisy. We believe a “filter or stretcher” box was contributing to this.
 - The box was part needed by one of our other setups where the DAQ does not sample as frequently as a scope. The signal had to be stretched there.
 - With a scope, the box is not needed.

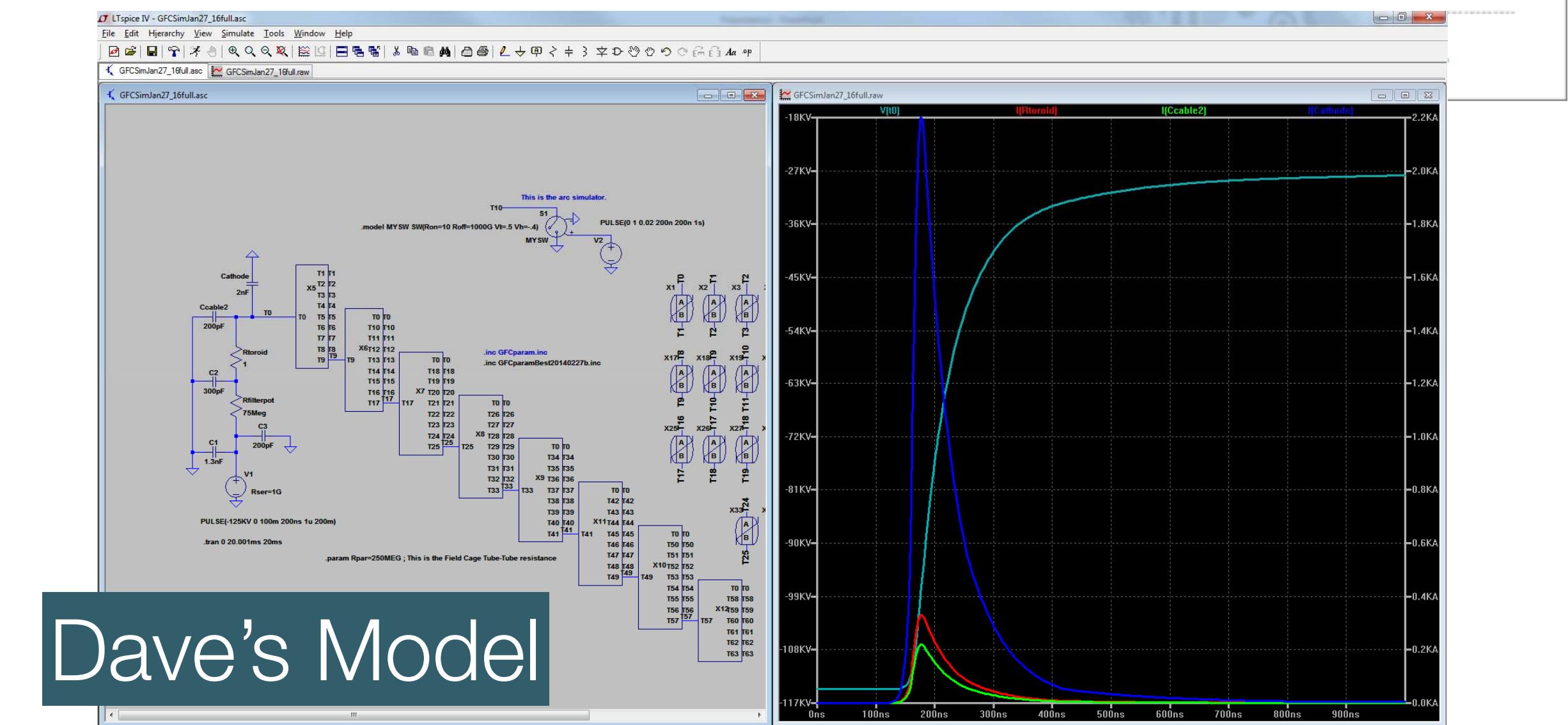
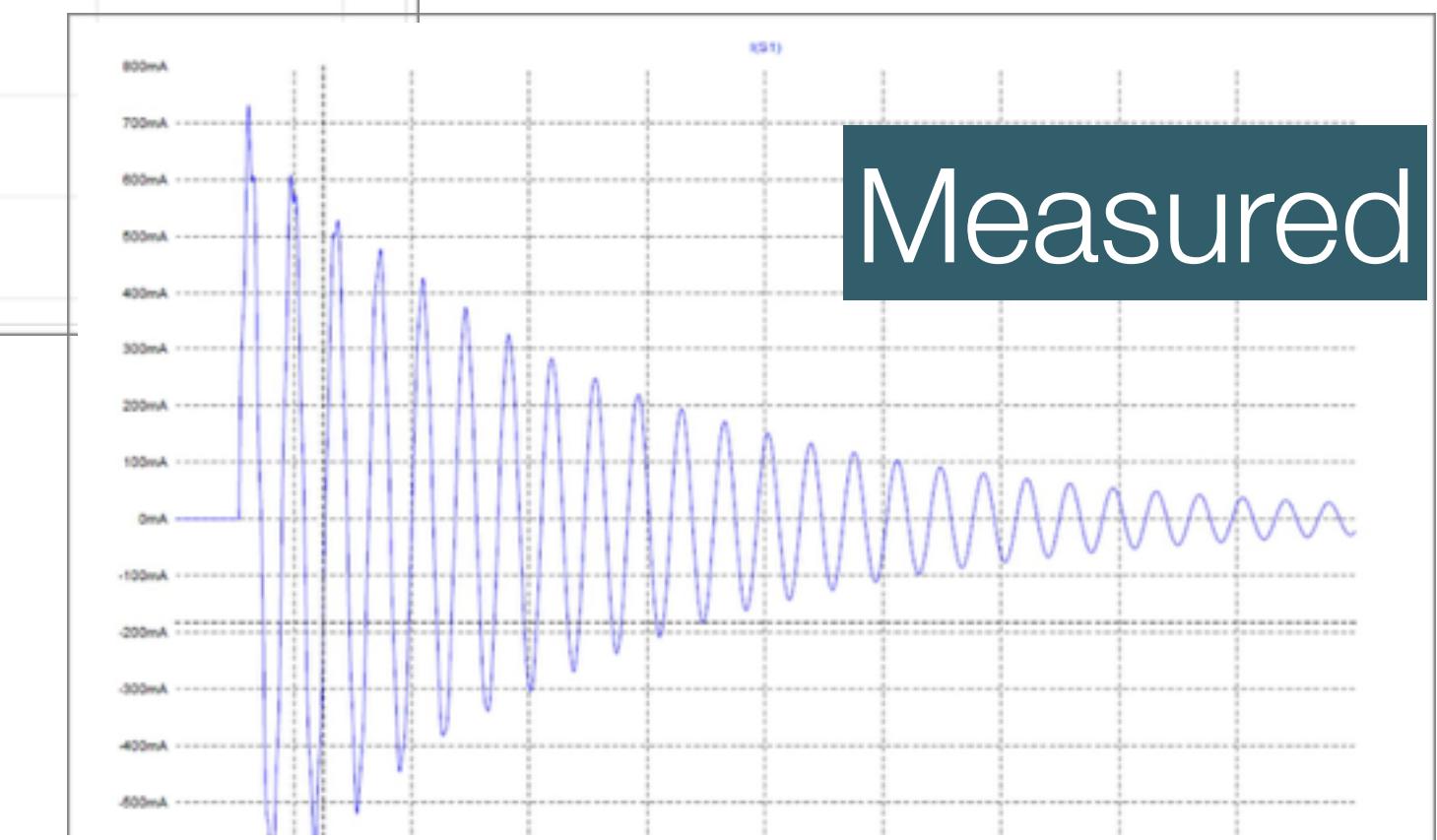
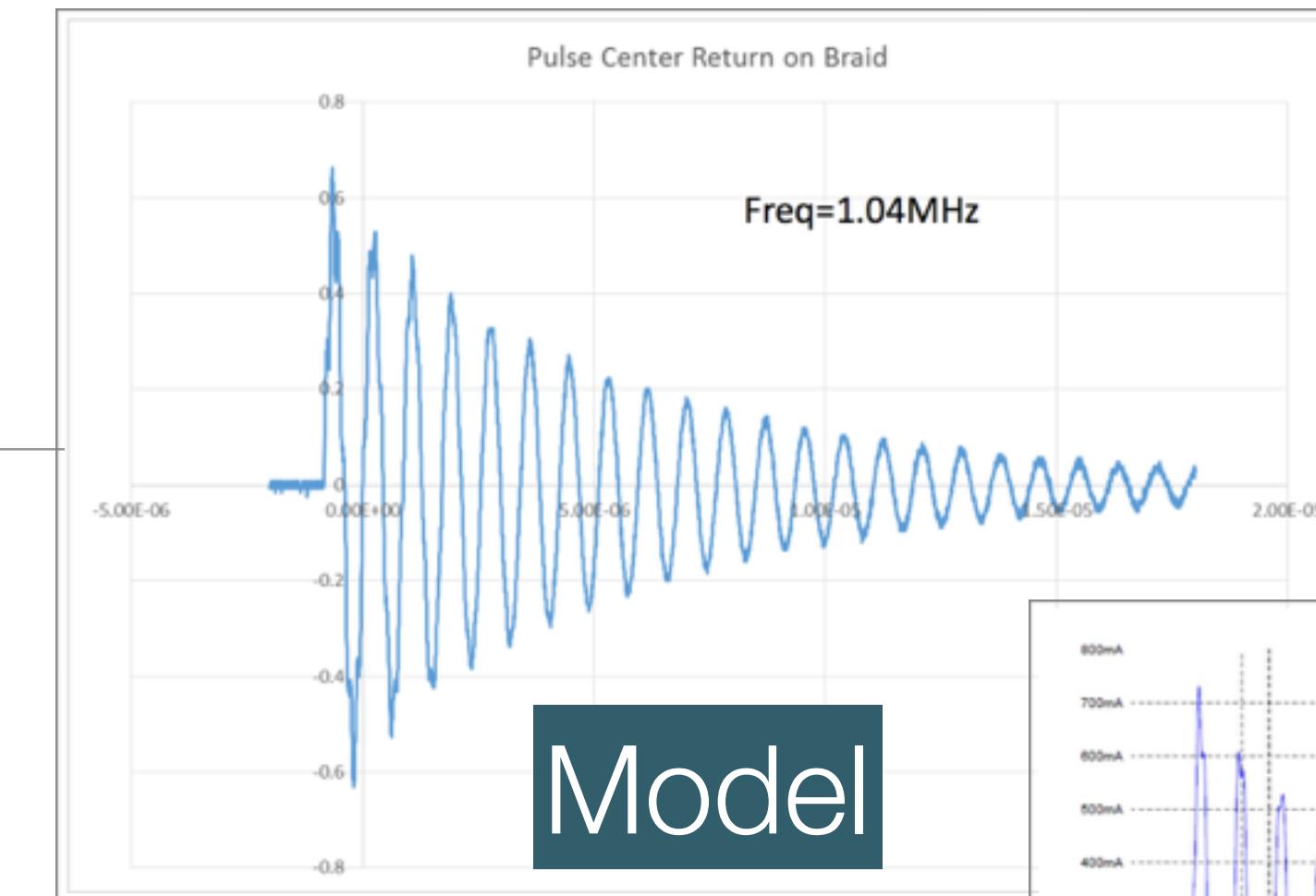


Pictures from
Hans' talk



Toroid + Cable for MicroBooNE

- It was requested that the cable be removed in the late summer. We have been taking data with a normal cable ever since.
- There were concerns about the toroid hurting the cable.
 - We tested the cable in air to about -100 kV and saw no issue.
 - We have been using a similar installation to trigger a setup at the PAB since late last year without issue. The setup goes up to ~100 kV.
- Dave Huffman modeled the behavior of the toroid. The model matches the performance very well. It seems that this is understood.
- Dave Huffman also modeled how the toroid would respond to a discharge from tube 10. It looks like we would see a signal.



Final Thoughts

- The toroid is a fast handle for current events in the TPC (blips, discharges)
 - Trigger readout
- We have used it successfully at the PAB for months without issue.
- It is not necessary for operation, but could help with diagnostics.
- The two original talks are here: <http://microboone-docdb.fnal.gov:8080/cgi-bin>ShowDocument?docid=4488>
- Further documentation is here: <http://microboone-docdb.fnal.gov:8080/cgi-bin>ShowDocument?docid=5140>

