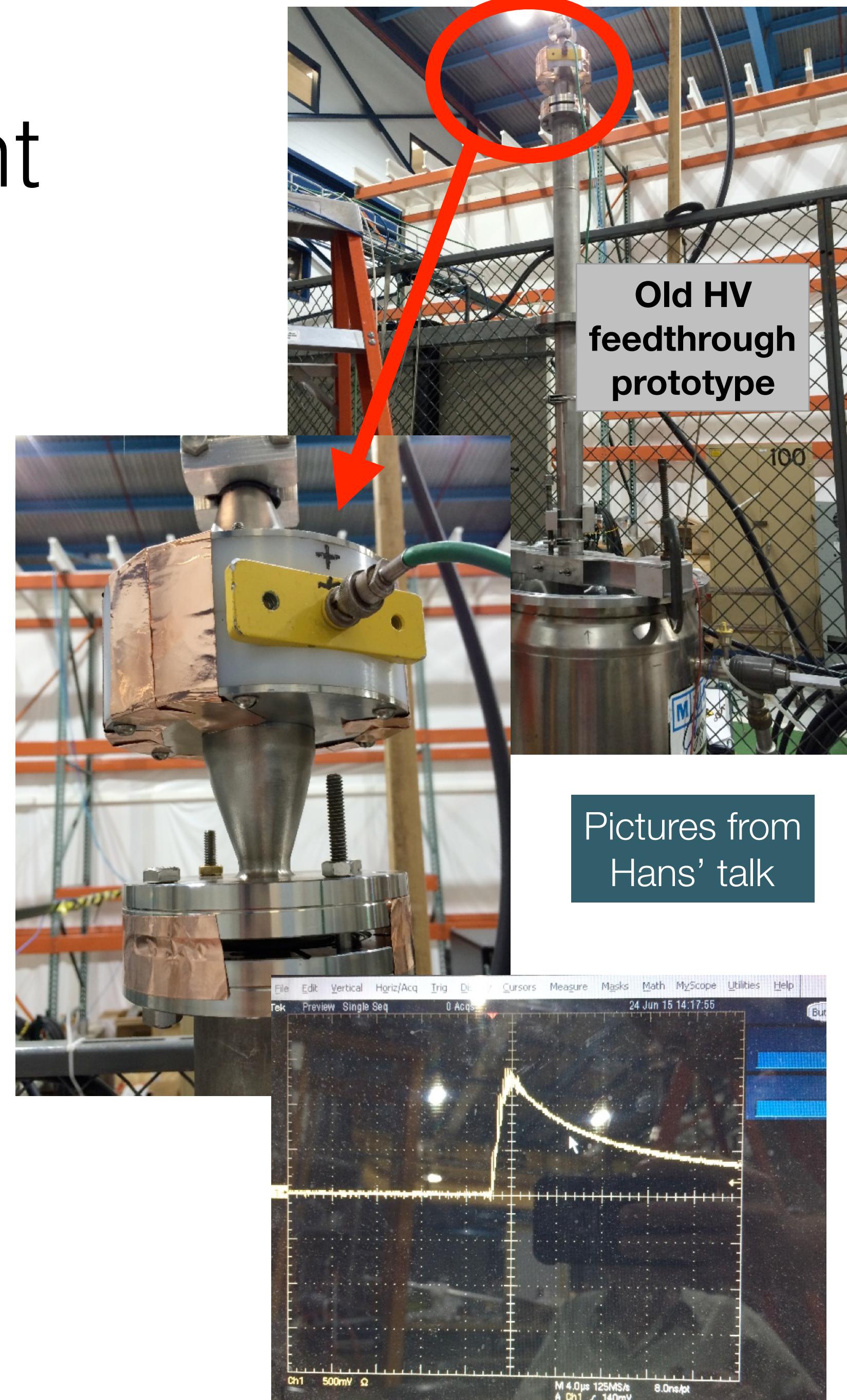


Toroid Summary Slides

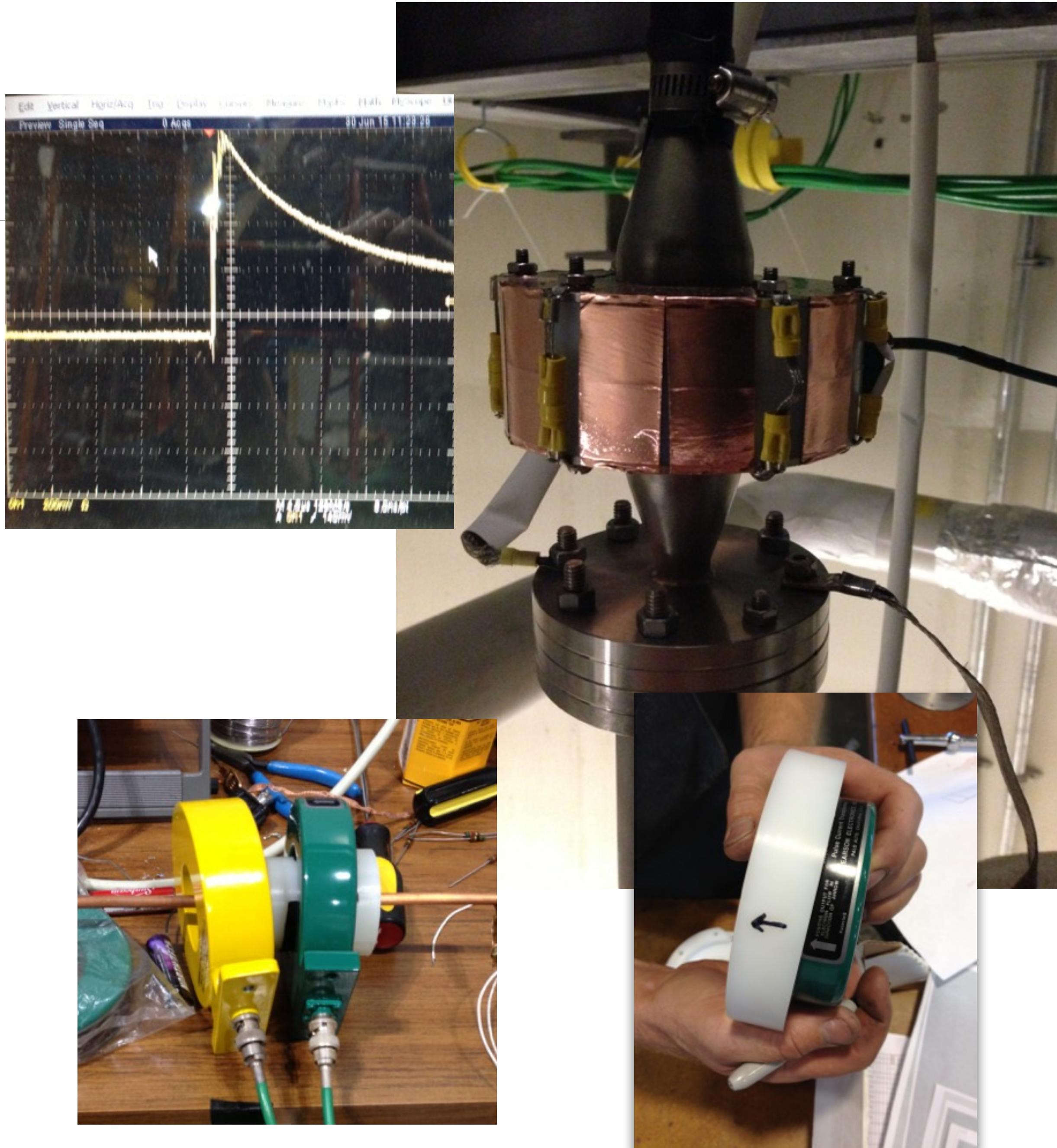
From 7/17/15 Talk: Current Pulse Monitor

- The purpose is to detect fast changes in the cable's current
 - A similar device has been used in other experiments (ICARUS) to "watch the cable relax during ramp up"
 - **We have seen no evidence of "precursors" with this or any other device**
 - The scope picture is from a discharge in air to a sharp point
 - The pulse *is* the spark
- This device fit a modified cable at D0 — it would not fit the cable we use on uB
 - I postponed getting it approved for the 10 kV ramp
 - The shop was able to fast-track the modifications needed to work at uB, and the device will now work with our cable



From Commissioning Review Talk: Additional Option: Toroid

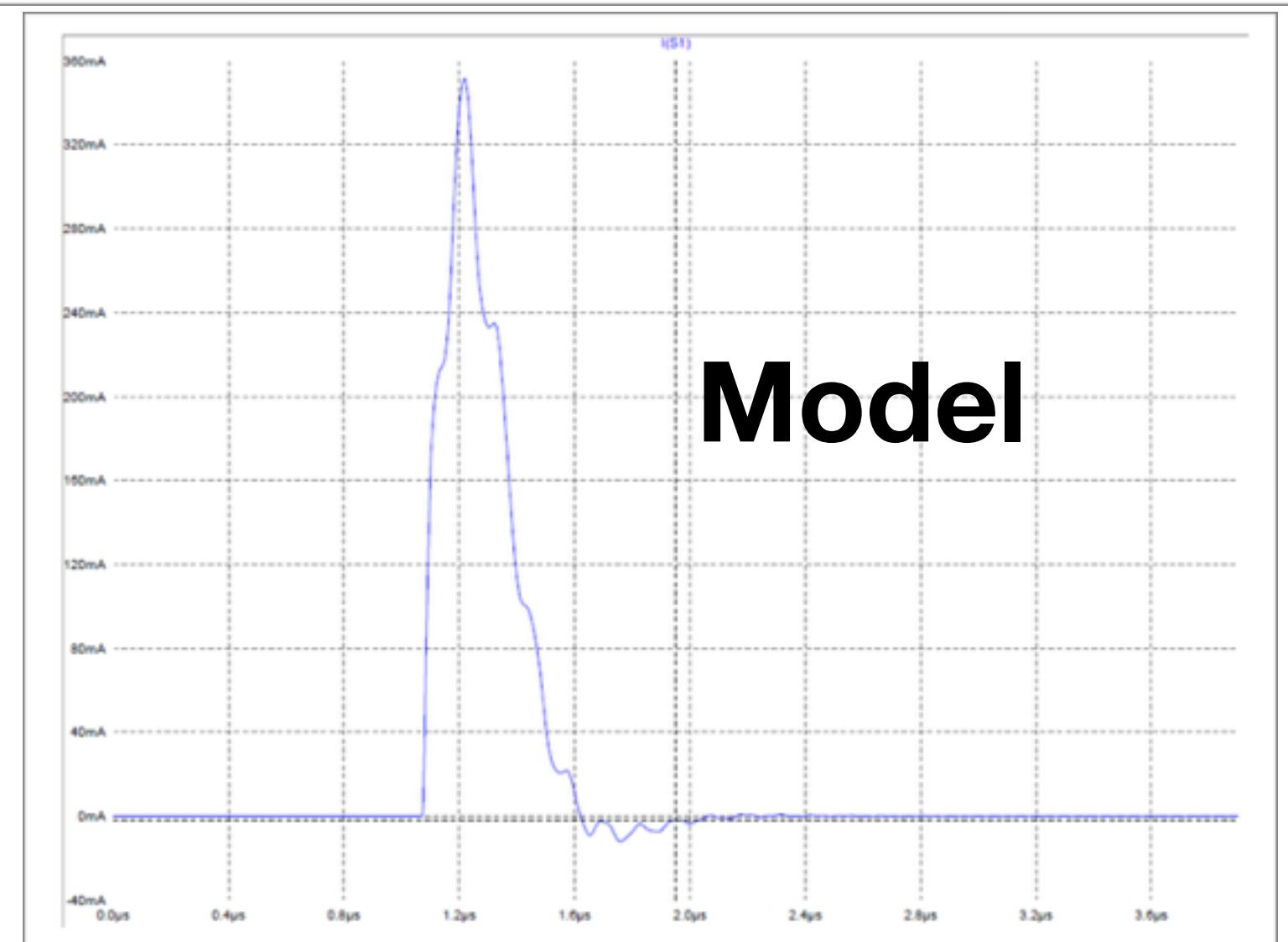
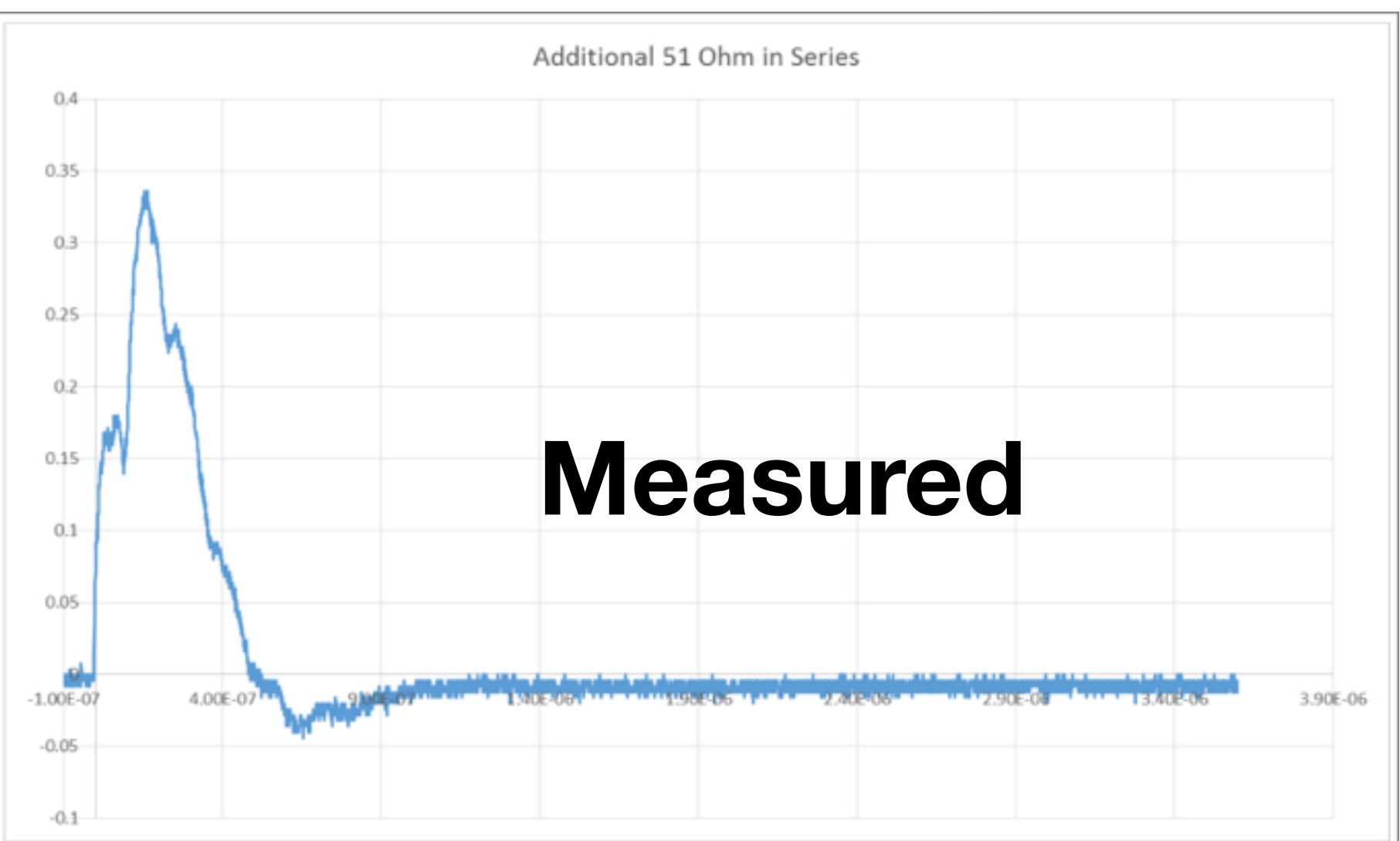
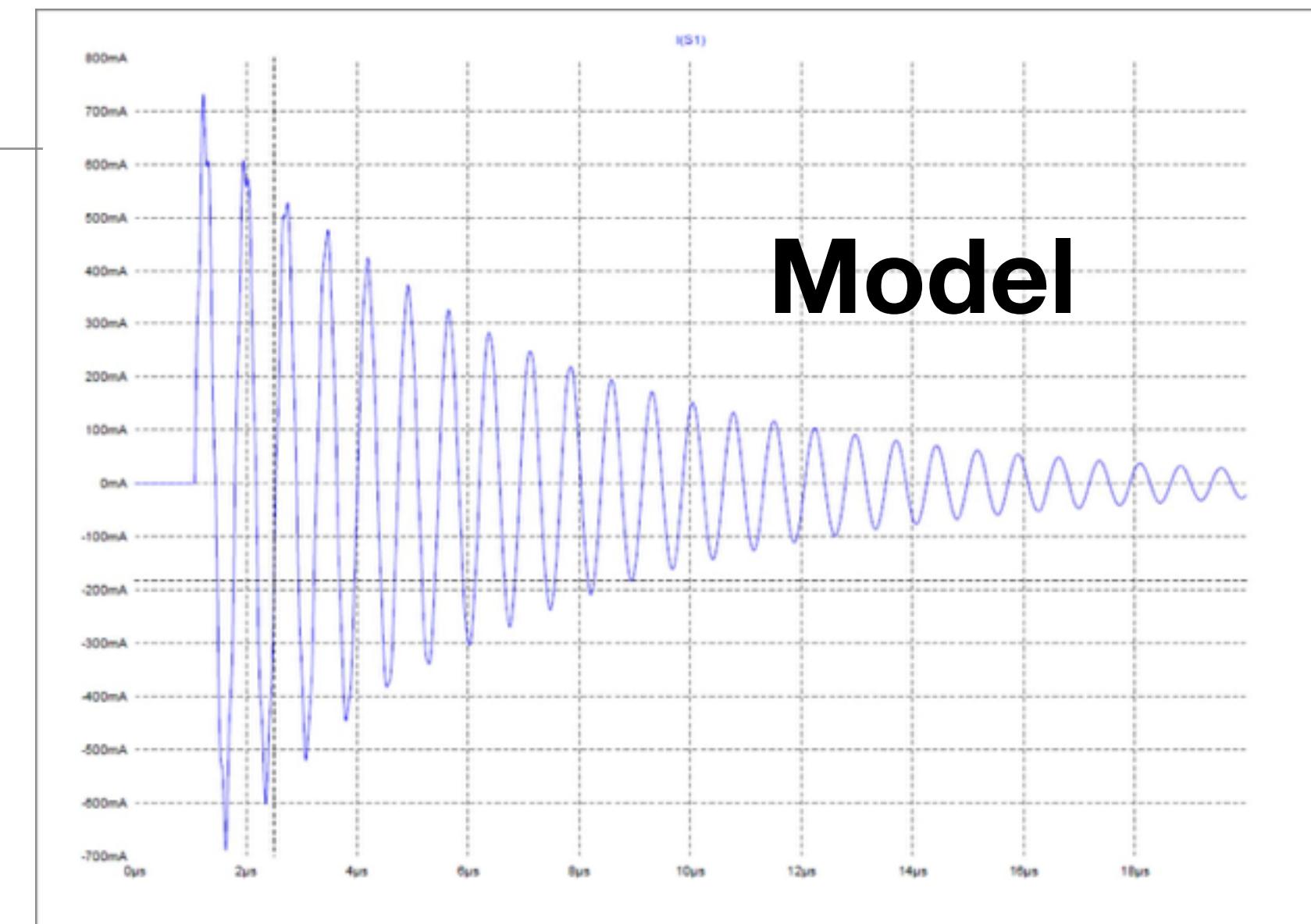
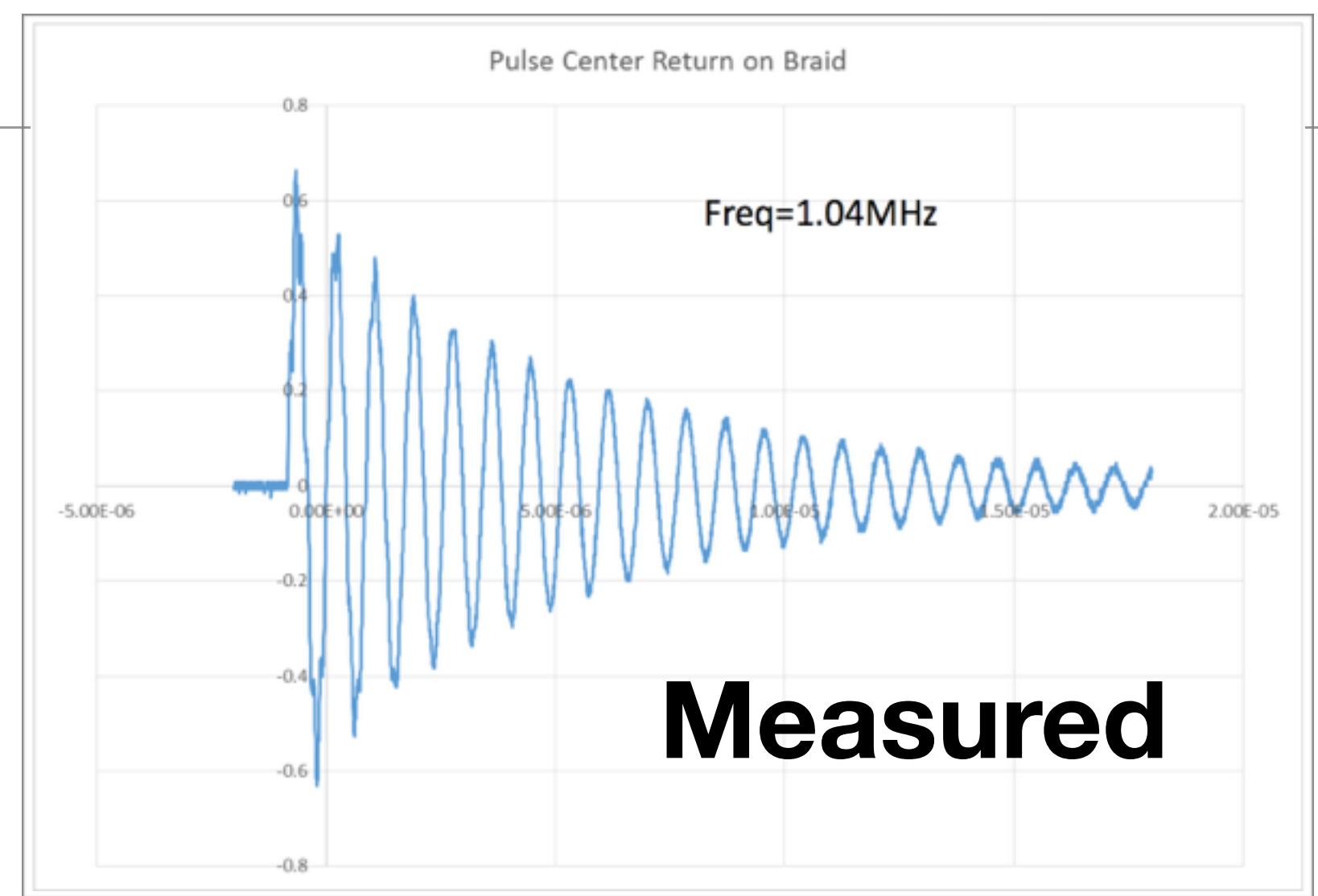
- Not necessary for operation at 70 kV, but will be available for future diagnostics
- Toroid:
 - Cable goes through the center; encased in UHMW PE; secured by flange connection
 - Considered Pearson and Ion Physics models
 - Can detect rapid changes in current
 - Also, at the moment, the fastest handle to determine if there are instabilities
 - Can be used to trigger the DAQ
 - Only method at present to know if the instabilities are constant or “spikey”
 - Modeling of what we can expect under different scenarios is under study by **D. Huffman**



From Commissioning Review

Talk: Additional Option: Toroid

- It looks promising – we could possibly understand the pulse shape going through the feedthrough.



Damping resistor added:

Summary

- Cable with toroid was removed after being briefly this summer in uB.
 - It was setup with the scope to record (save) triggered traces.
 - We installed it with the “stretcher” box and it was very noisy
 - This the “stretcher” box is not necessary with a scope — we were using it for another application
- A test of the cable was requested. It was tested to ~100 kV in air without issue.
- We've been using it to trigger a DAQ in another setup for over a month now without issue. This setup goes to ~100 kV.
- The purpose is to help us understand what is happening in the cryostat. It is the fastest and most sensitive trigger for diagnostics.
- It's passive. It's insulated from HV and ground. It's been tested.