

# DC status update

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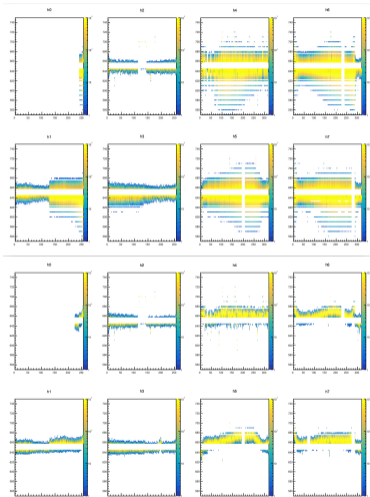
University of Illinois at Urbana-Champaign

Technical Board Meeting  
July 13<sup>th</sup>





# DC05 noise study

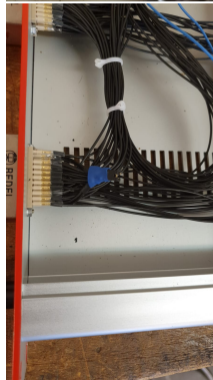
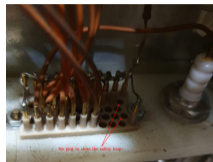


→ Improved grounding of FEM digital part through RJ45 cage (bottom)

- High noise: Threshold  $\gtrsim 40$  fC necessary to keep rate  $\leq 30$  kHz (top)
- Difficult to diagnose as the baselines moves also with noise level
- Understanding of grounding scheme under study:
  - Digital
  - Power
  - Analog
  - Shielding
- Observation of fluctuating 60mV between FEM ground and Chamber ground

- Rack cooling: Broken fan replaced
  - Water cooling: Ok
  - HV migration to CAEN:
    - Implementation in DCS: Thanks to Christophe
    - ISEG-CAEN mapping checked
    - Hardware disable: open safety loop: fixed now
- Operational
- LV ok and no errors on MurphyTV so far
  - Noise: Threshold scan to be scheduled this week

Basically ready and no problem to report so far

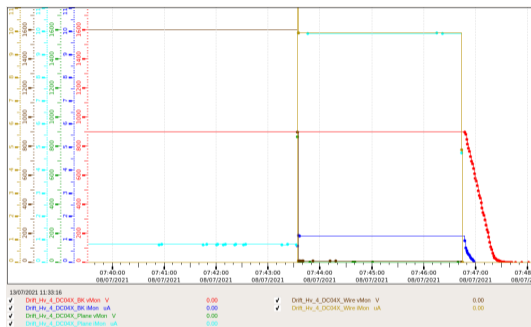


# DC04 status

- Sudden raised of current in FW and Cathode:  $10\mu A \rightarrow 3\text{min}$  before it trips

Note: HV mapping mistake, X and Y are swapped

- Not possible to raise the HV
- Measurement with Shuddha:
  - $1\Omega$  to ground for Y' cathode and YY' cathode
  - Beyond accuracy of the device for BKs
  - Beyond accuracy of the device for FWs !?

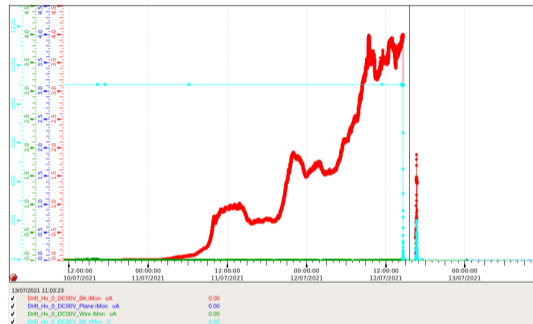


Next: Localise the potential broken wire (most likely on top)

Isolate the region and check whether HV cannot be operated with partial RO

# DC00 status

- HV mapping to be checked?
- Current growing on DC00V since 11/07/2021
- Reaching trip limit yesterday
- From CAEN, the leak current correspond to  $\sim 10 \text{ M}\Omega$   
Dust in the chamber? Can it be burned? To be investigated by detector expert



side comment: Connected trip between channels understood, comes from hardware settings set up in clean area for HV tests of DC04)

- (PMM: all fine but one “problematic” CAEN channel for drift 3X to be supplied from another channel)
- DC00: All planes working (HV, LV, RO) fine but DC00VV' to be clarified
- DC01: All planes working (HV, LV, RO)
- DC04: Broken wire on Y', investigation for partial RO and all planes
- DC05: All planes working (HV, LV, RO) but YY' which cannot be operated
- ST03: All planes working (HV, LV, RO)

# BACKUP



# Default of isolation

