

Preliminary Cosmic Data with UVa GEM Layer

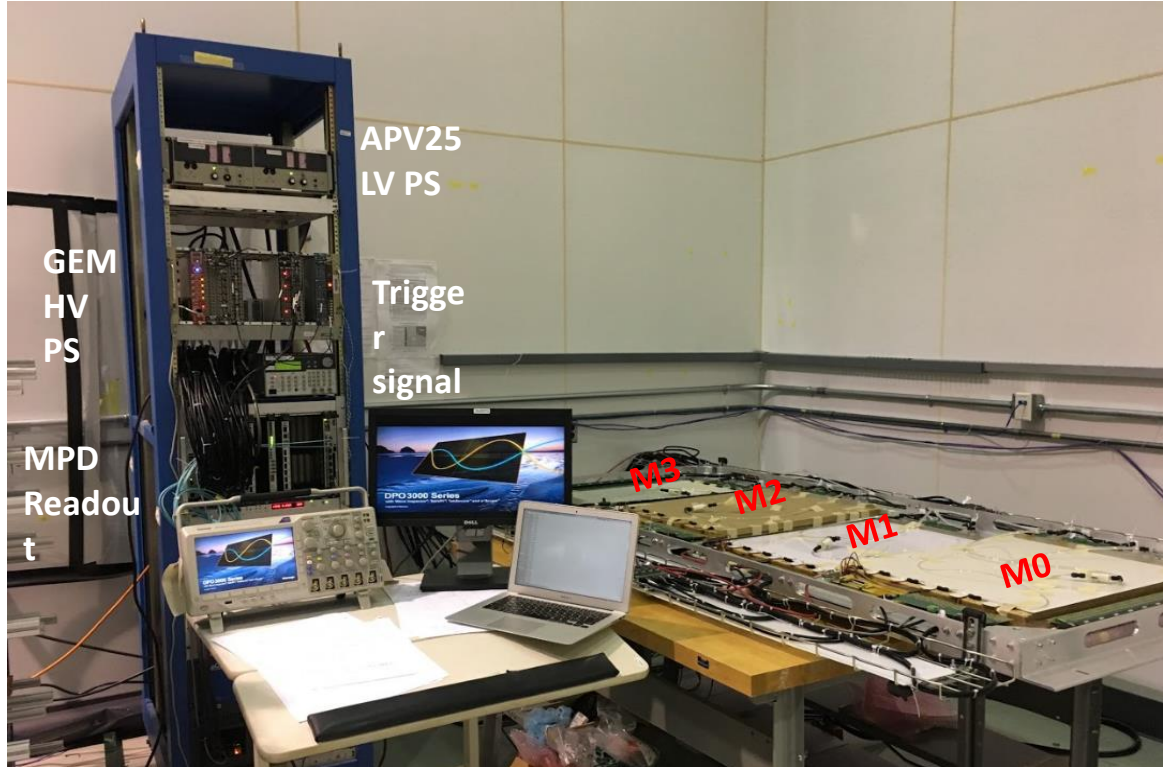
SBS Weekly Meeting, Nov. 14, 2018

Kondo, Siyu, Tongtong

Weekly meeting for the commissioning of the GEMs every Thursday at 9:00 am

Wiki: https://hallaweb.jlab.org/wiki/index.php/GMn_GEM_Commissioning_Meeting

Setup of UVa GEM Layer (EEL Clean Room 124)



DAQ Status:

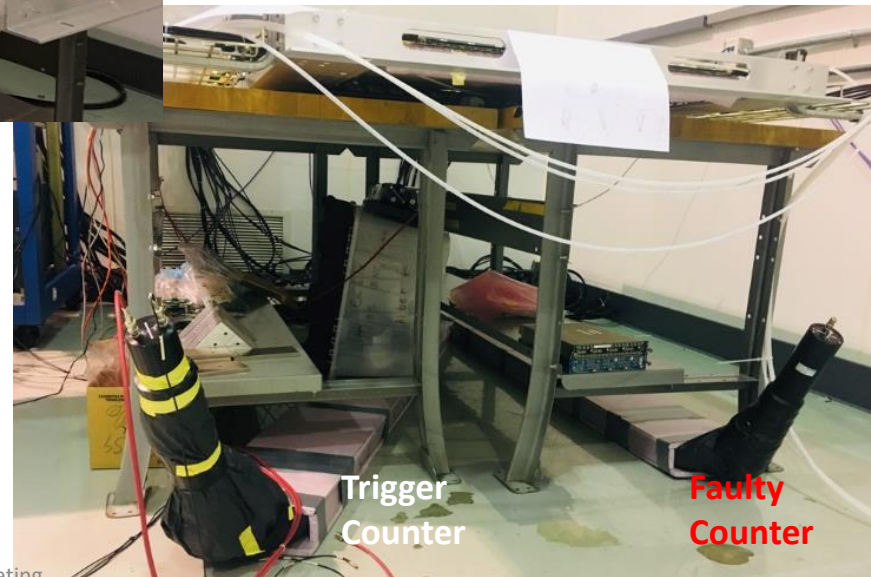
- 7 MPD used
- 22*4=88 APV card connected
- LV PS with voltage regulators

Trigger Counters:

- 1 counter out of order
- Problem with the PMT divider
- one counter in use \Rightarrow diagonal position w.r.t GEM layer

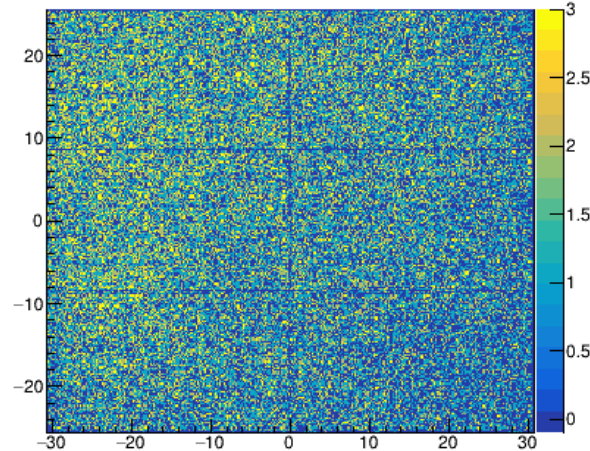
GEM Layer:

- 4 GEM modules (M0 to M3)
- Gas Flow: ~ 2.5 Vol change /h
- CAEN HV PS: 4 channels HV = 3950V

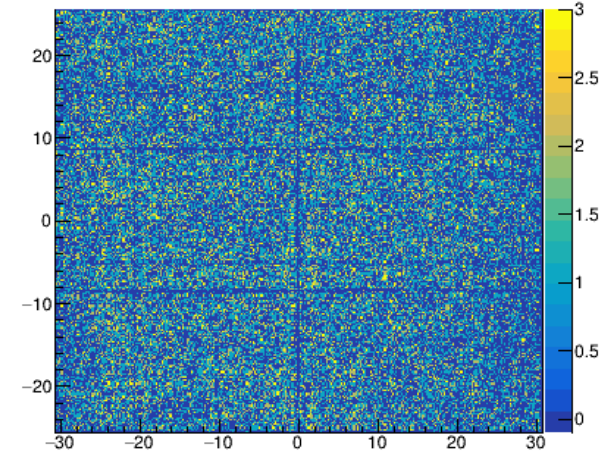


2D Hit Map: Distribution of Event Cluster Position

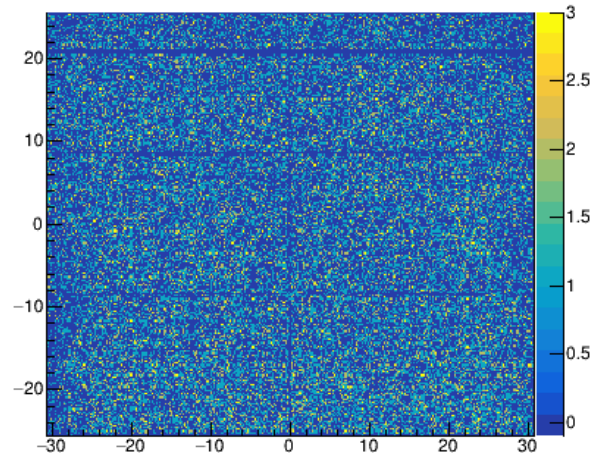
Module 0



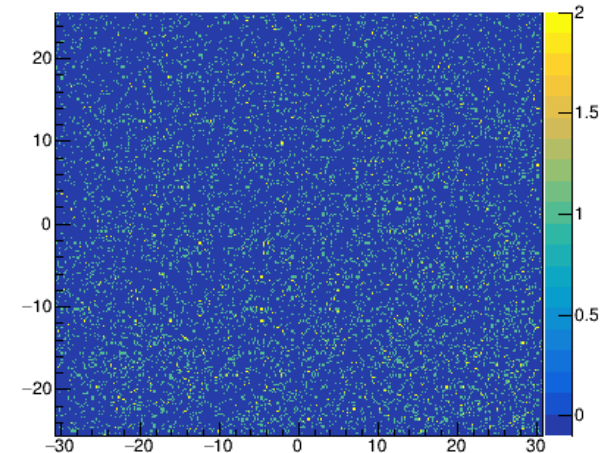
Module 1



Module 2



Module 3



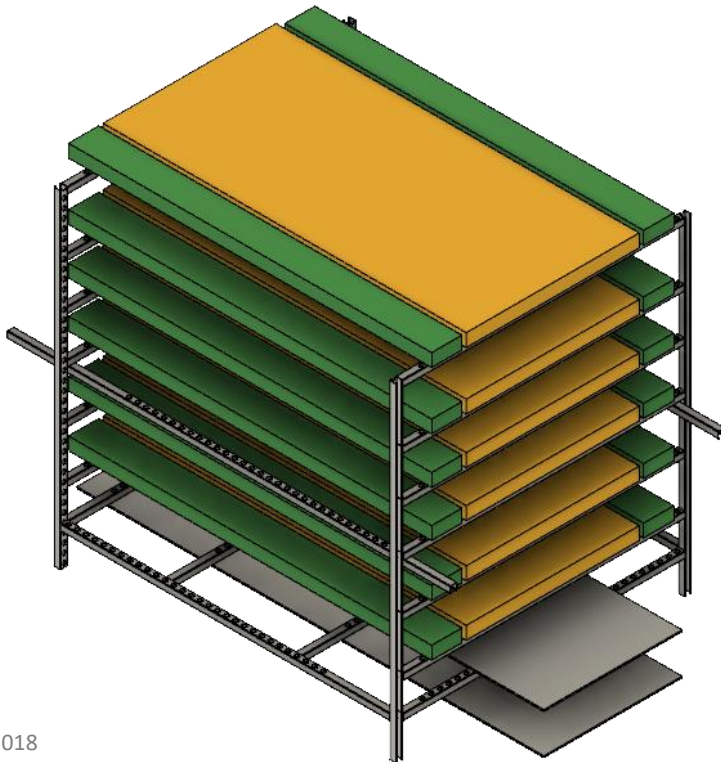
Preliminary results:

- Cosmic data: 700k triggered events
- Cluster hit position distribution
- All HV sectors of all 4 GEM modules are working
- Lower statistics in Module 4 due to trigger counters acceptance
- HV scan run ongoing
- **Basic check of the GEM module performances completed**

UVa GEMs Cosmic Stand Setup (EEL Clean Room 124)

- ⇒ **Main Cosmic stand:** Commissioning of up to 6 UVa GEM layers
- ⇒ **Lightweight on-wheel installation frame:** To move single layer into the main frame
- ⇒ Design is completed and had been approved by JLab structural engineer (Whit Seay)
- ⇒ We have an inventory of all the parts available at UVa (Unistrut bars, joints and other needed connection pieces)
- ⇒ Will submit a list of the remaining items to be purchased to Mark Jones by the end of the week
 - ⇒ Most are parts that are available at McMaster-Carr ⇒ so delivery should be quick once the order is made

Cosmic Stand with GEM layers



Lightweight Frame

