GEM Meeting October 5th, 2018 Joey McCullough

Pedestals and Widths

- 4.1 kV
- GEM0: ~745 μA
- GEM1: ~153.3 µA
- Larger strip number within APV has larger pedestal
- First 256 strips are 2slot, last 512 are 4slot



Pedestals and Widths

- 4.1 kV
- GEM2: ~745 μA
- GEM3: ~153.5 μA
- Two GEMs with higher divider circuit current have comparable widths, but lower current GEMs have very different widths. Why?



Cosmic Trigger



- Triggered MPD with coincidence of signal from two scintillators shown below
- Rate: ~5 events / minute



Cosmic Trigger

- Very high occupancy, but signals aren't that much larger than pedestal
- Latency = 4
- Inconsistent pulse shape











- Cs-137 button source
- Examples of scope traces of pulse from last GEM foil used to trigger
- Consistent noise ripple after pulse

GEM octant labeling scheme

Button source shown in octant 0













• For following plots, source was in octant 0

100

sample

<u>1 2 3 4 5</u>



sample

 $\frac{1}{1}$

sample





Latency = 8



sample

sample

sample

Latency = 10



Latency = 15

Future Work

- Latency = 15 seems to be highest above pedestal
- Will scan latencies near 15 more finely and repeat source and cosmic studies at that timing
- Still can't take data with two MPDs. Second MPD buffer length is always too short?
- Continue to attempt to lower GEM1 pedestal width. Try different divider circuit for each GEM?