ISU GEM development Update

Dustin McNulty

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Decoder Update

- We gave up on trying to get Danning's decoder working for our data: It was seemingly too sophisticated for us to parse and make work for our setup

- We are now developing our own low-level decoder; we are making progress and now understand the structure of our raw data files and are making appropriate Tree structures to hold data

Readout Hardware Update

- We plan to send our remaining 2-slot backplanes to the rework shop to fix I^2C addressing issue next week (2 -3 week lead time)

- Digital Patch Panels are being fabricated now (should have in 1- 2 weeks).

- Analog Patch Panel design is under review. These are not as important since we have more MPDs than we need

- We have the USB blaster and still plan to update MPDs FPGA firmware soon (haven't yet)

- Not sure when SBU will be ready to use our electronics; I'm planning to ship them in early May (or earlier if needed).

GEM Hardware and DAQ Update

- We completed HV burn-in procedure on our second GEM chamber and assembled a lower current divider circuit (as compared with our first GEM)

- This divider circuit uses 5x higher resistances between foil top and bottom and in between foils giving 5x lower divider current (~150 μA instead of 750 μA) which works better with our HV PS

- 75/25 Ar/CO_2 is now flowing through top chamber; flow rate is ~12 ml/min

- Ramped-up HV to 4 kV without issue; divider current is steady at just under 150 μA (as designed)

- Have small, localized cosmic trigger acquiring data at ~10 events per hour.
  - With a working decoder, we can use this cosmic data to understand if our APV mapping is correct or not.