Install of Triplet Polarimeter in Hall D

- Installation in hall (4/8, 4/9)
- Reconnecting cables (4/13, 4/14)
- Testing connections (4/14)
- Installing foils (4/15)

April 15, 2015
Kei Moriya, Michael Dugger
Installation in Hall

- Installed in beam line
Surroundings

upstream flange

downstream wall

downstream flange
Re-connections

• Preamp and distribution box are now back on chamber (thanks to Nathan)
• Tom, Keith working on putting on turbo pump
Electronics Rack

- Our rack is called U1-13
Signal Cables

- Signal cables connected based on Mike’s documentation of channels
Chamber Stand

• Newly built
Detector

- In vacuum chamber
Ground

- Ground connected to far corner of walls
Power Supplies

back view

front view
Noise Levels

2mV/10ms division

good examples

5mV/10ms division
Noise Levels

5mV/10ms division

10mV/10μs division

10mV/40μs division

bad examples
Take Out D-sub

disconnect output from detector

Used to be “bad”!
After Fixing Detector Connection

Used to be “good”!

5mV/400ns division

5mV/10μs division

5mV/10ms division
After Fixing Detector Connection

Used to be "bad"!

5mV/400ns division

5mV/10μs division

5mV/10ms division
Installing Be Foils

- Due to safety regulations, I was not able to handle the foils
- Mark Stevens had previously had the Be training
- Thanks to Mark and Keith
Installing Be Foils

Foil #2 installed

All foils installed
Grounds in Preamp Enclosure
Detector Connection

- Asked Keith to check connection of detector
- Was not tightly fit before, now is
- All channels consistently show similar noise levels

20mV/10ms division

20mV/400ns division
Motor Controller

- Taking out converter tray disables motor controls, need to ask Hovanes to reset
- Controller box is inside hall, next to HV/LV supplies (beneath stair case leading to collimator cave)
Motor Controls

- Had Justin push GUI buttons while I was in collimator cave
- Positions measured with caliper roughly agree with survey results
- No re-survey of converter positions
- Thanks to Nathan, Justin

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<th>measured (mm)</th>
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Converter Positions

- Mark etched the converter thicknesses onto the converter tray
- Converter closest to door is 0.001” (25 μm), furthest is 0.003” (75 μm)
Copper Mesh on LV Supply

- Copper mesh had been falling off
- Reinforced with Al tape
Near Future

- Ready to close hall tomorrow
- Sasha working on fADCs
- Survey will measure vacuum chamber tomorrow morning
- Anything else?
Looking Further Ahead

- Beam expected on Saturday, run will be 2 weeks + $\alpha$ at most
- We will probably want background rate measurements first:
  - beam quality may not be best possible
  - fast feedback using active collimators will not be in
  - not sure how background rates will change for 12 GeV beam
- When fADCs are working will take data (cosmics, noise?)
- If there are long delays and hall is opened, we can use sources
- Monitoring with scalers, analysis code, simulation of detector/backgrounds