Analysis Progress

for the d_2^n analysis meeting

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1. Problem with E in Farm-Replayed ^{2}H Runs
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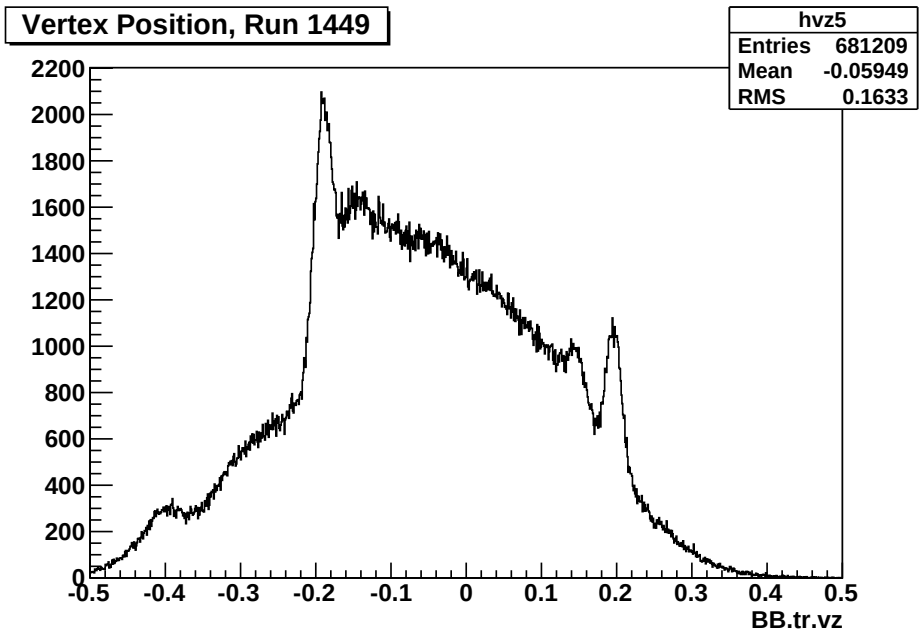
Problem with E in Farm-Replayed ^{2}H Runs

- Matt noticed a problem with reconstructed E in runs 1258-1262 (hydrogen one-pass coincidence runs)
- E/p was peaking around 1.7 instead of 1.0 – but it was correct earlier in the day (^{3}He target)
- Turns out that StartType.pl was sourcing an outdated DB file for some subsets of runs
- None of our four-pass production dataset was affected

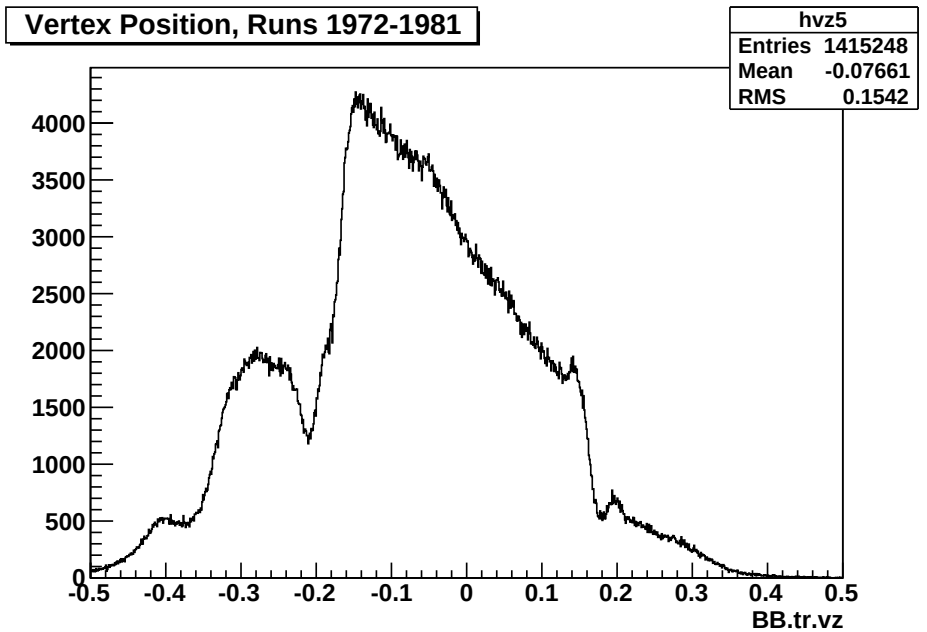
Vertex-Z Cut

- It looks like the vertex-z distribution changed dramatically during production running
- Does anyone know why?

Run 1449 (5.9 GeV, Feb 15)

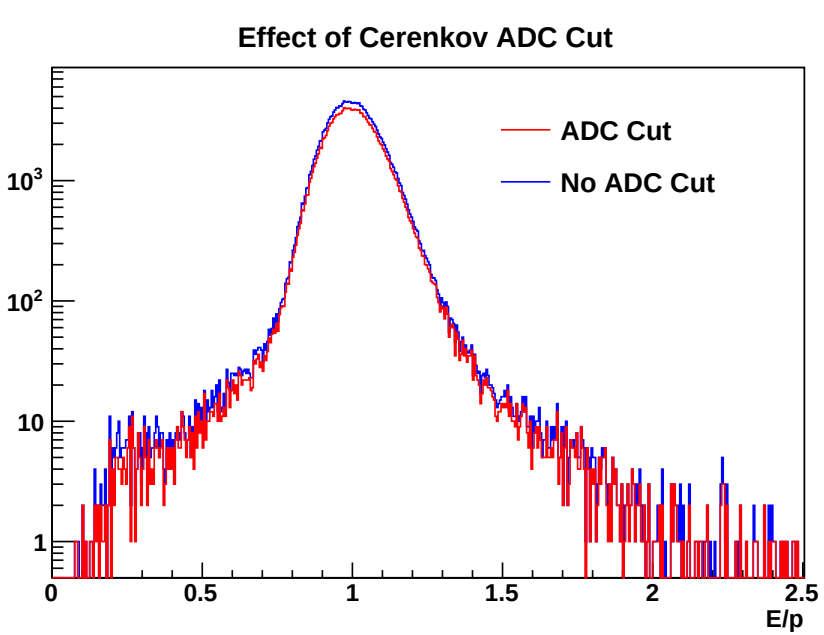


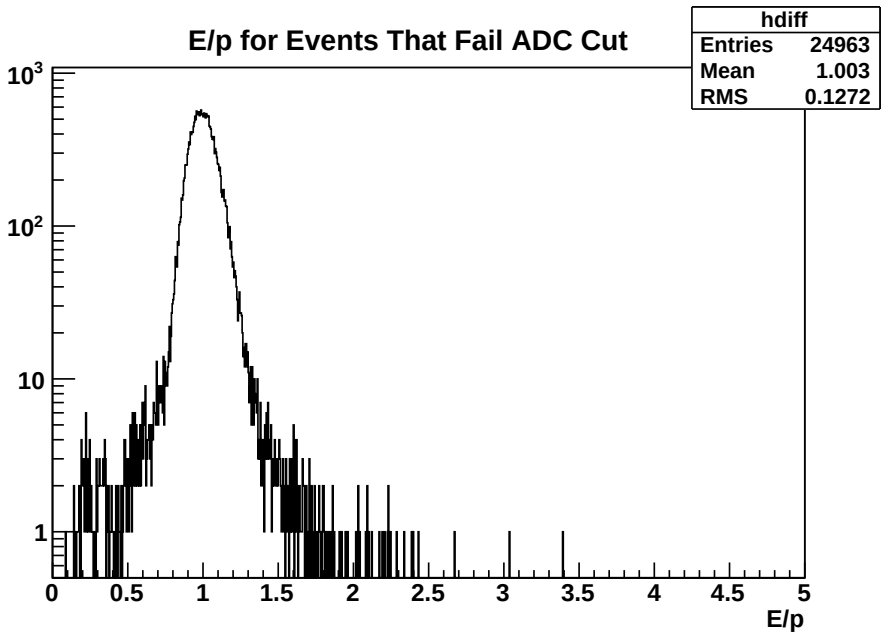
Runs 1972-1981 (5.9 GeV, Mar 4)



Čerenkov ADC Cut

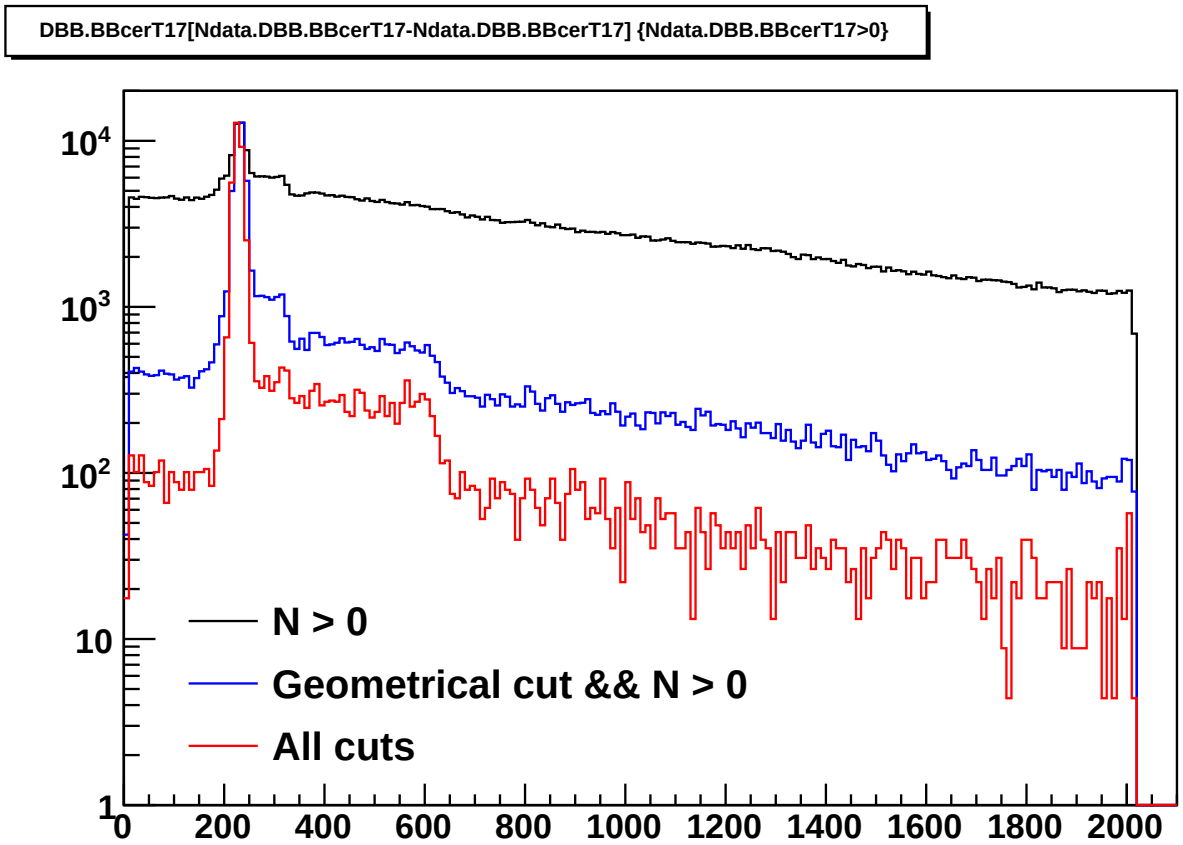
- Matt showed that, by itself, a 3-p.e. ADC cut did a good job cutting out pions from a T6 sample
- In conjunction with the rest of our cut set, is this cut justified?
- Dropping the ADC cut increases our statistics by 14.1%





Čerenkov TDC Timing

- To better understand the TDC timing spectrum, let's look at how well our other cuts remove accidentals ...



Summary

- E problem in one-pass runs is easily fixed
- Vertex z position distribution changed during experiment
- Čerenkov ADC software cut does not clean up our sample's E/p behavior
- TDC spectrum: non-accidentals are confined to the sharp peak, but the shoulder shape is mysterious

What's Next?

- Cuts
  - Čerenkov cut consistency
  - Confirm times of HWP switches
- Asymmetries
  - Elastic ^{3}He asymmetry to check sign
  - Asymmetry on particles that scattered from pole piece
  - Asymmetry on new good electron sample
  - Nitrogen dilution factor
- Compton
  - Replay of Saclay-daq Compton files
  - P_γ
  - Produce single P_e for each run period
- Dissertation