

Analysis Progress

for the d_2^n analysis meeting

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1 PID with Shower and Preshower

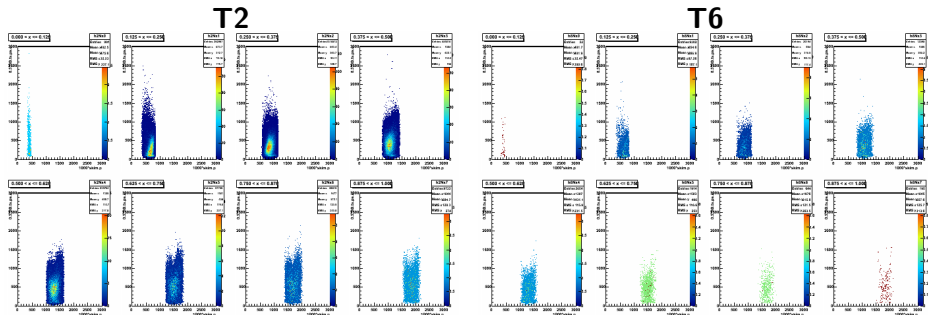
- E_{ps} vs p
- E vs p
- E_{ps} vs E_{sh}

2 Summary

3 What's Next?

E_{ps} vs p : Negative Particles, Binned in x

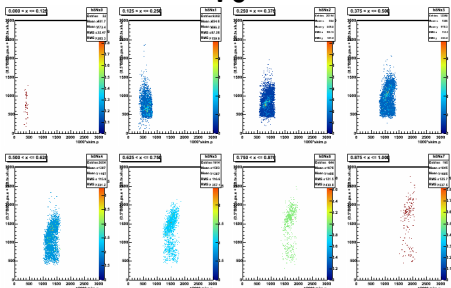
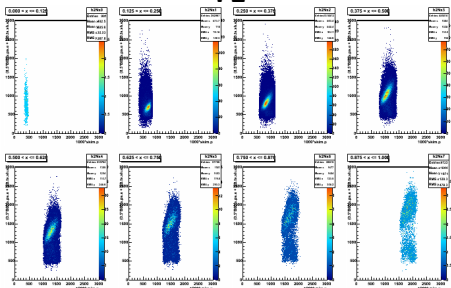
- Ten four-pass runs
- Eight uniform x bins
- Cuts on magnet region, vertex-z, χ^2/dof , track/shower alignment, beam trips, $0 < p < 10$ GeV



E vs p : Negative Particles, Binned in x

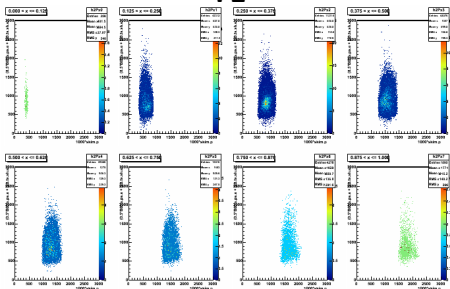
T2

T6

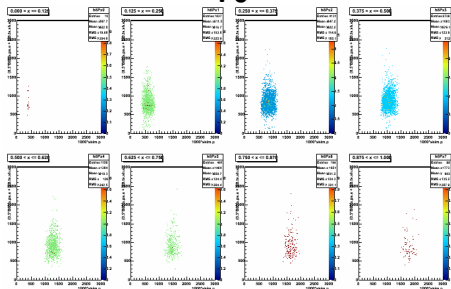


E vs p : Positive Particles, Binned in x

T2

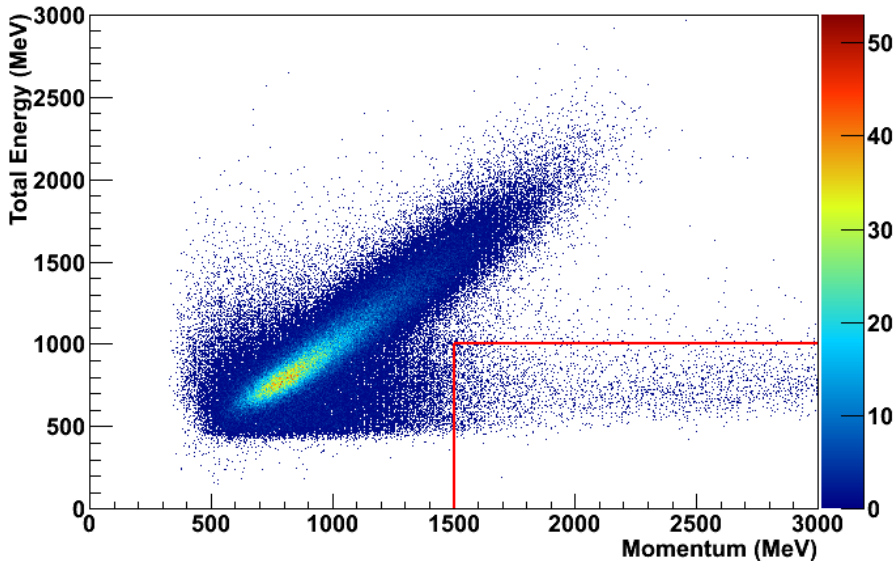


T6



E vs p : Outliers (i)

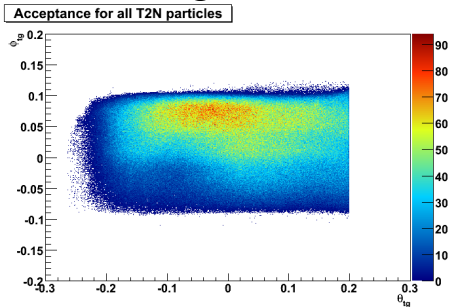
Energy vs Momentum for Negative T2 Particles



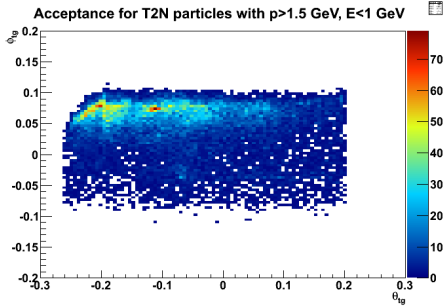
E vs p : Outliers (ii)

- Do the outliers come from a specific part of our acceptance?
- Could imply an obstacle or a tracking problem...

All T2 Negative Particles



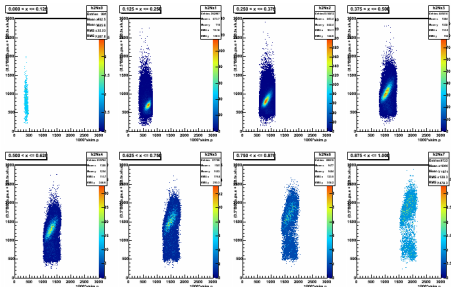
Outliers



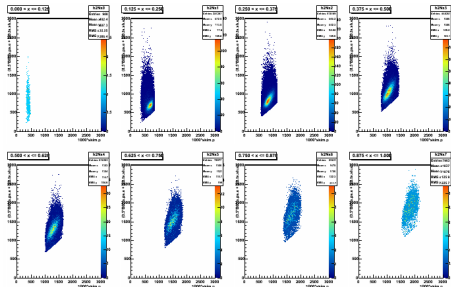
E/p cut

- Cut set at $E/p > 0.6666$

E vs p before E/p cut

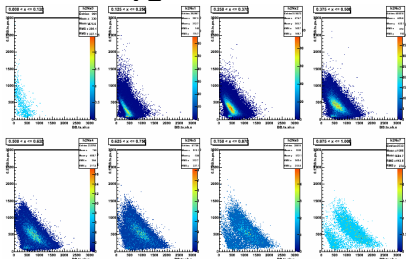


E vs p after E/p cut

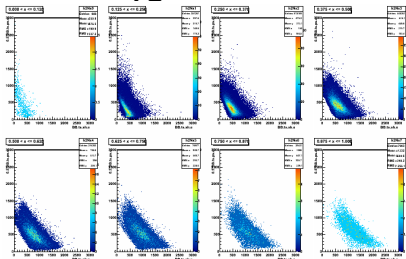


E_{ps} vs E_{sh} : Negative Particles and E/p Cut

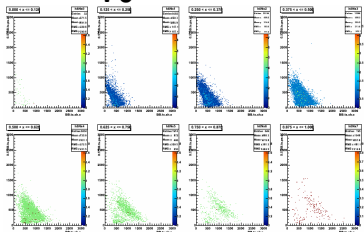
Before Cut
T2



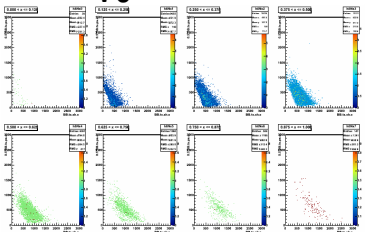
After Cut
T2



T6

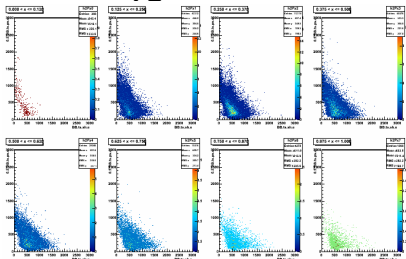


T6

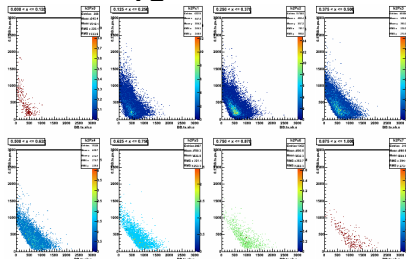


E_{ps} vs E_{sh} : Positive Particles and E/p Cut

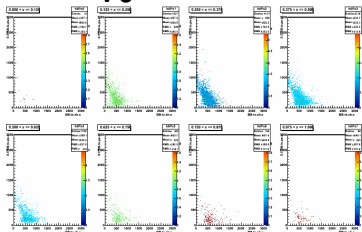
Before Cut
T2



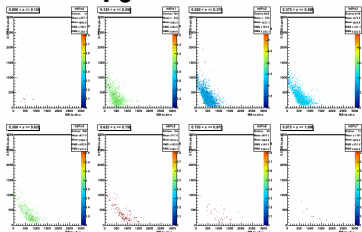
After Cut
T2



T6



T6



Summary

- E/p and E_{ps}/E_{sh} seem to be fairly equivalent in terms of PID
- E/p cut has no effect on shape of E_{ps} vs p
- Tracks with E uncorrelated to p mostly come through the top of the magnet

What's Next?

- Asymmetries
 - ▶ Explore PID cuts in BigBite (bring in Cerenkov...)
 - ▶ Study consistency of all cuts over time
 - ▶ Confirm times of HWP switches
- BigBite Optics
 - ▶ Explain width of BB.tr.tg_ph distribution in positive optics
- Current Readouts
 - ▶ Track down source of zero-current readings
- Dissertation