

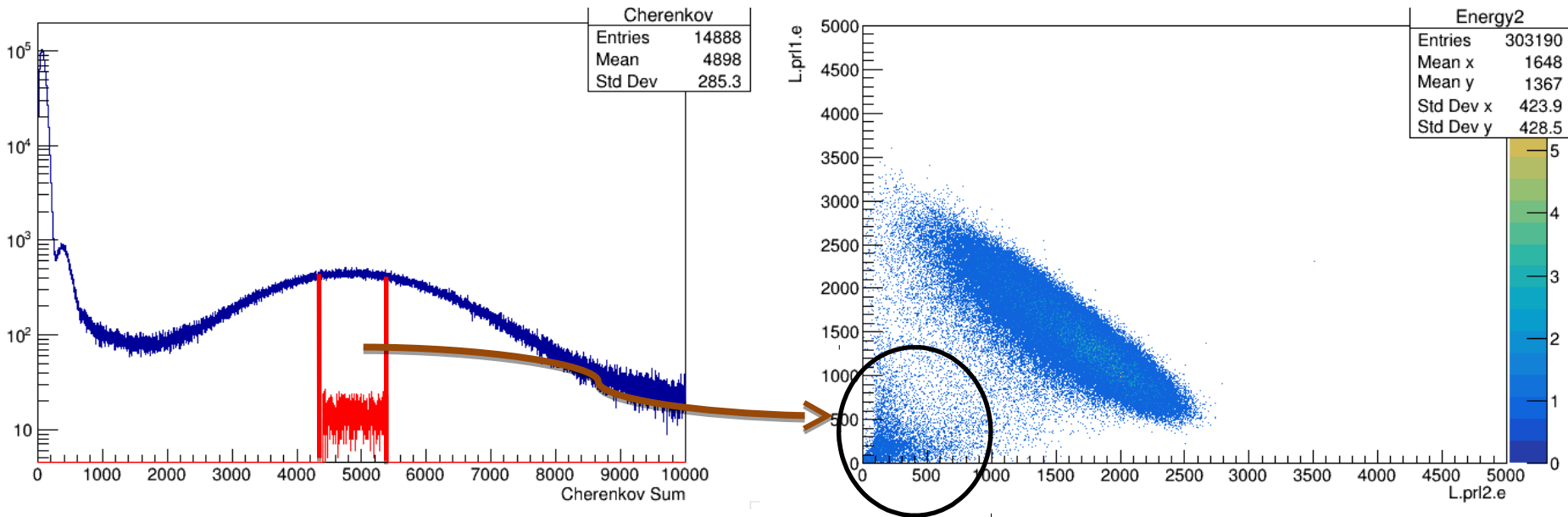
PID and other things

Mike Nycz

Calorimeter detection efficiency

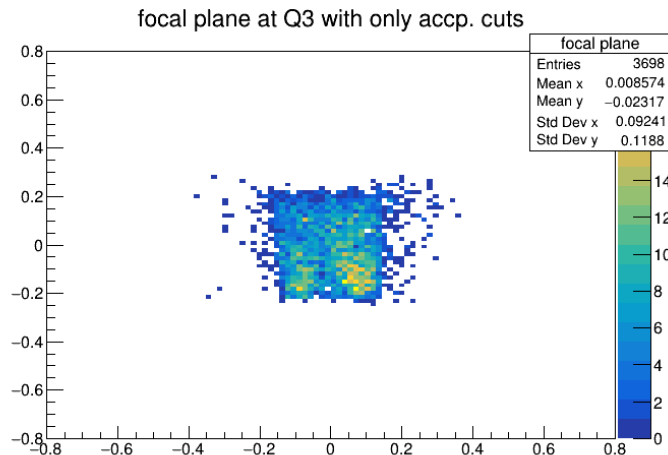
- “Pure” electron sample from Cherenkov
- Acceptance Cuts
 - $\text{Abs}(\varphi) < 0.03$
 - $\text{Abs}(\theta) < 0.06$
 - $\text{Abs}(\delta) < 0.04$
- `track == 1`
- Cherenkov
 - `Cher. Sum >4400 && Cher. Sum <5400`

What does the electron sample look like in the calorimeter.....

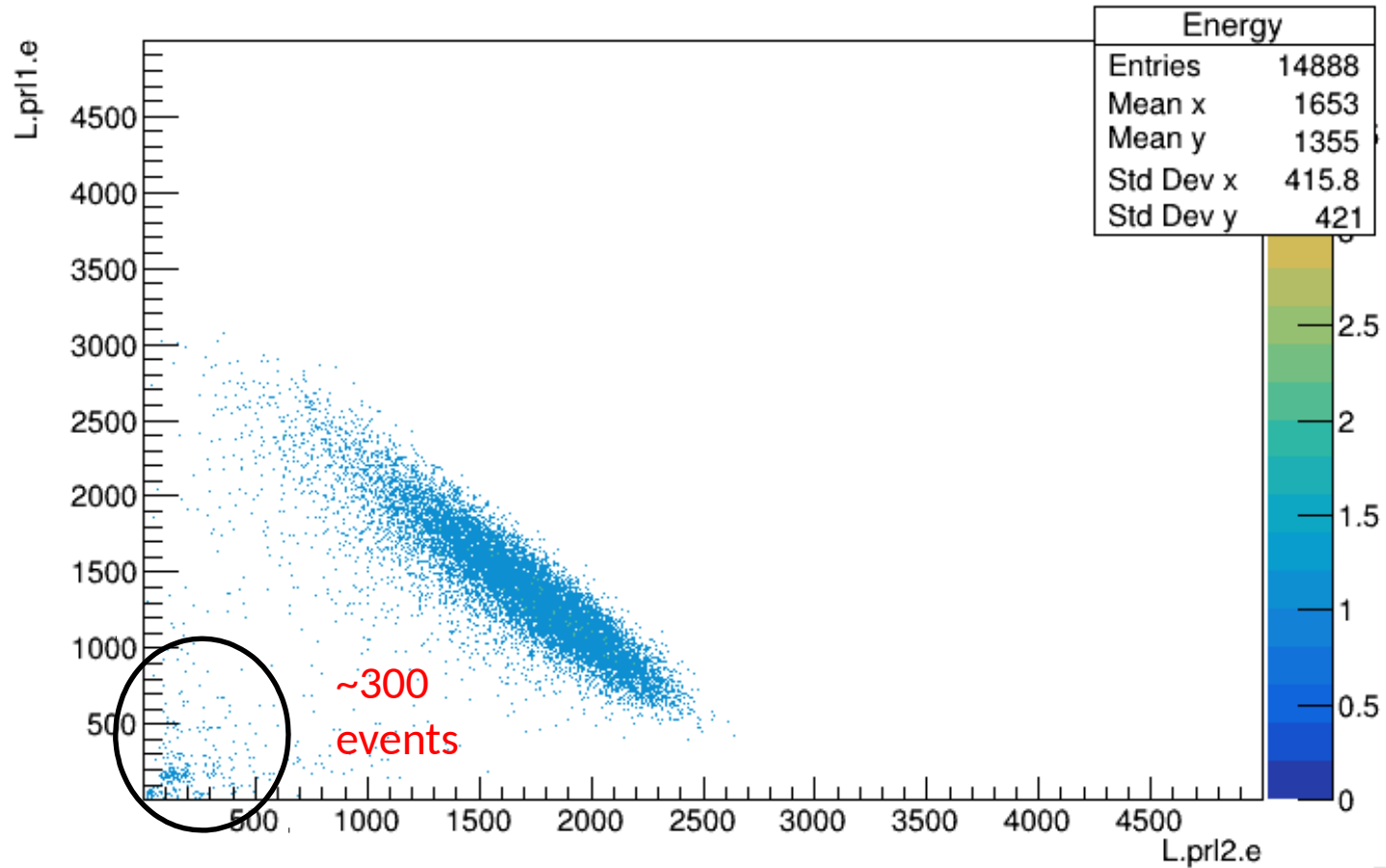


Events that have high Cherenkov signal and low energy

- Shujie made a note in elog about low energy particles scattering from edge of Q3
- Project from focal plane back to Q3
 - Require events come from within 30 cm radius of Q3 (actually tighter)



After making cut on events at Q3



Calo. Efficiency ---- Kin 1 ~ 0.999%

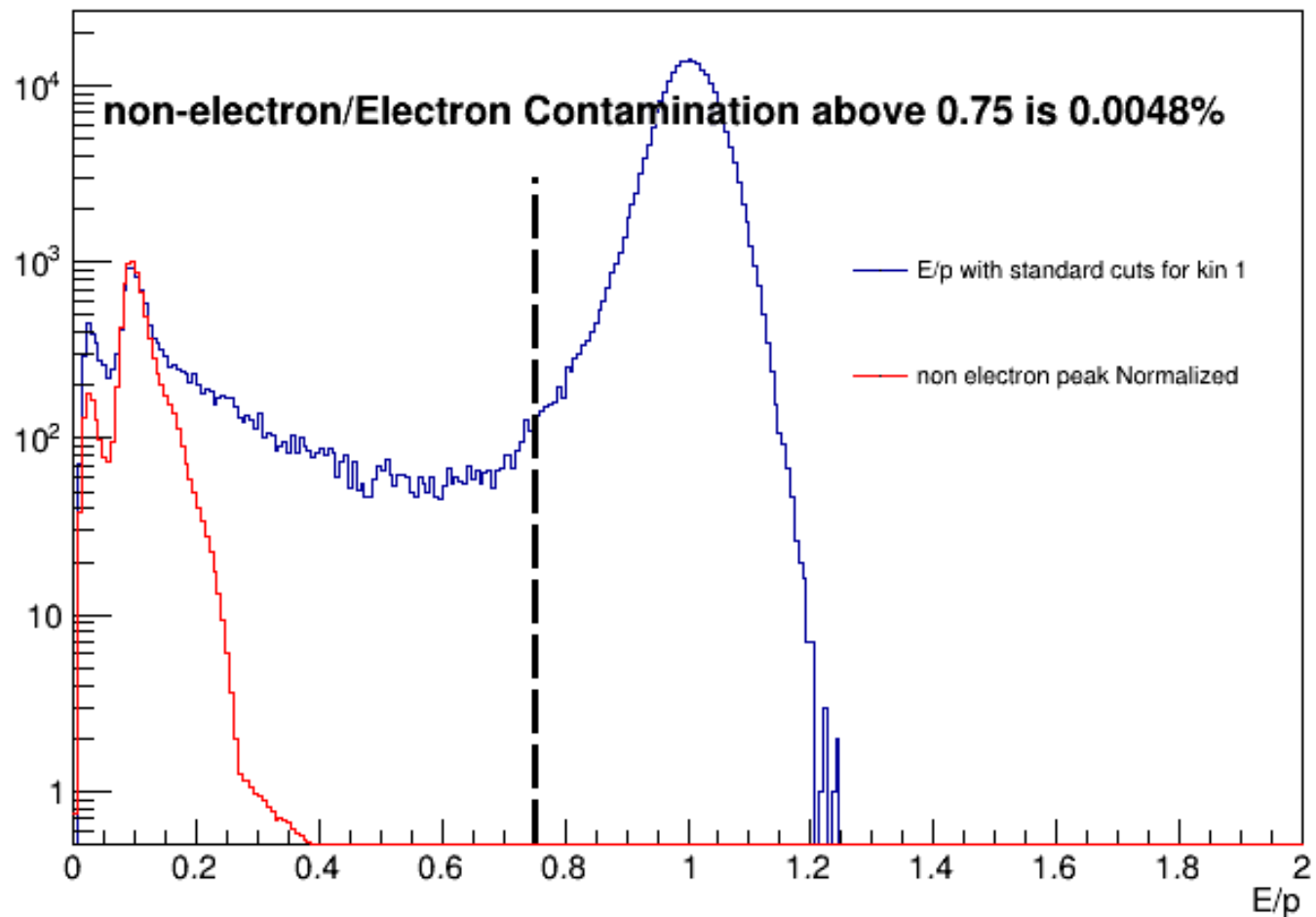
Suggestions? How to get a better sample without using calorimeter cuts (E/p)?

Contamination

Pion (non-electron) contamination

- After making all cuts
- Acceptance, single track, cherenkov, target z, T2 triggers, and E/p cuts
 - How many events remain?
- Fit non-electron peak and then scale it to match the peak that is present in E/p
- Count how many events extend pass E/p cut
 - $E/p > 0.75$

E/p with standard cuts for kin 1



H3 / D2 ratio
(Preliminary)

H3/D2 ratio

Cuts

$\text{Abs}(\varphi) < 0.03$

$\text{Abs}(\theta) < 0.06$

$\text{Abs}(\delta p) < 0.04$

$\text{track} == 1$

Cherenkov > 2000.0

T2 Triggers

Corrections

Density

e^+

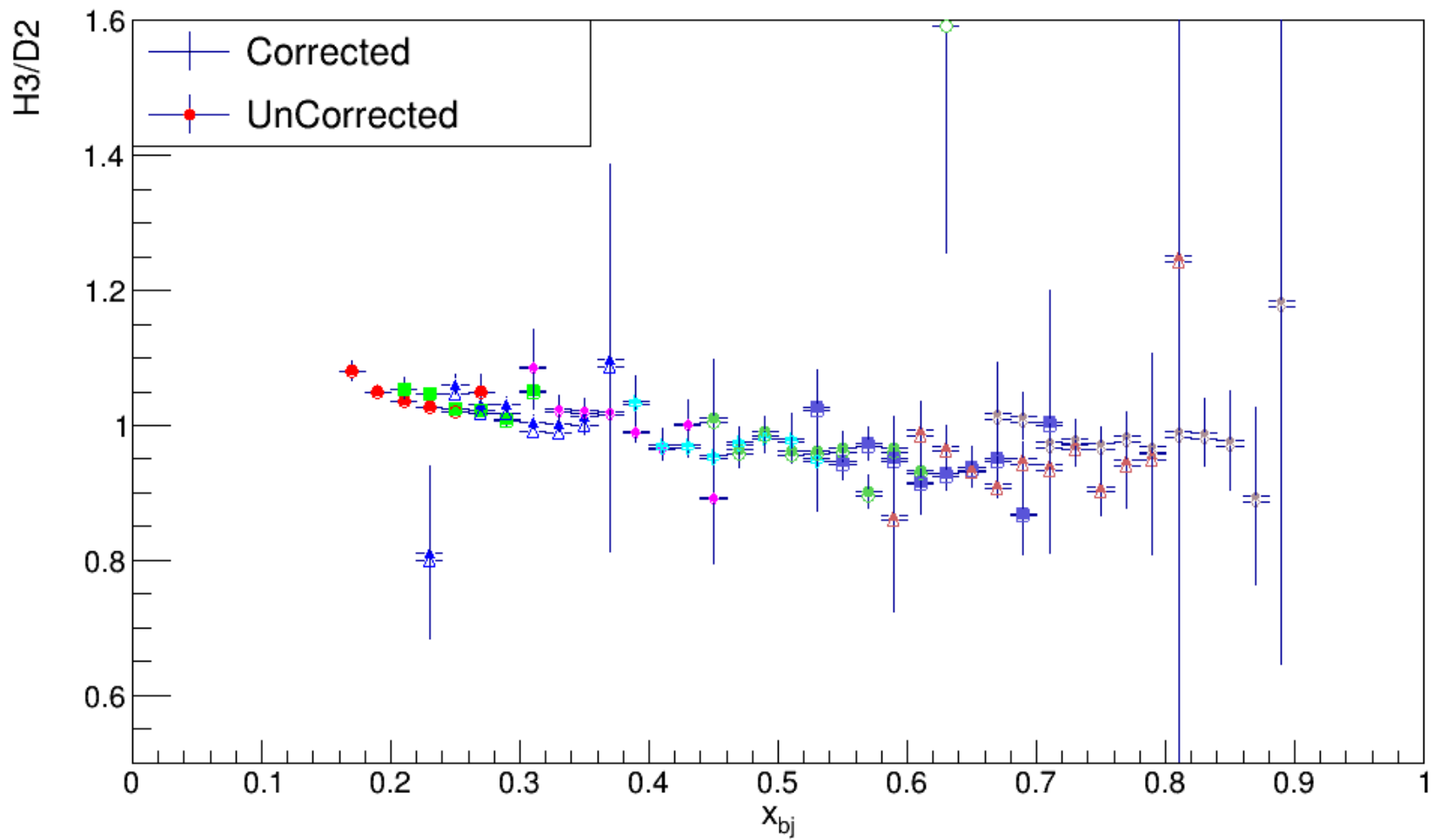
Beta Decay

End Cap

(rad. Corrections) –
need to be added

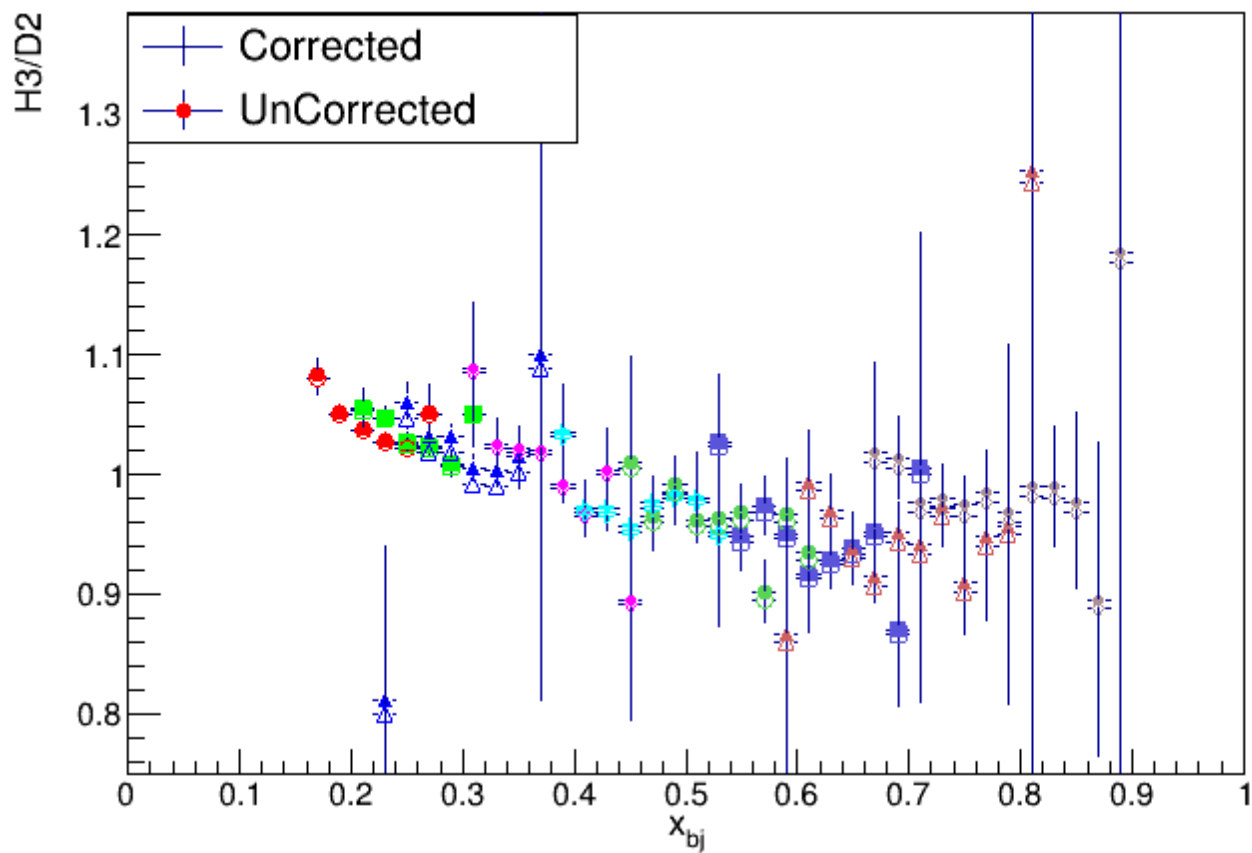
Just statistical errors --- Adding systematic errors

H3/D2 ratio : per nucleon

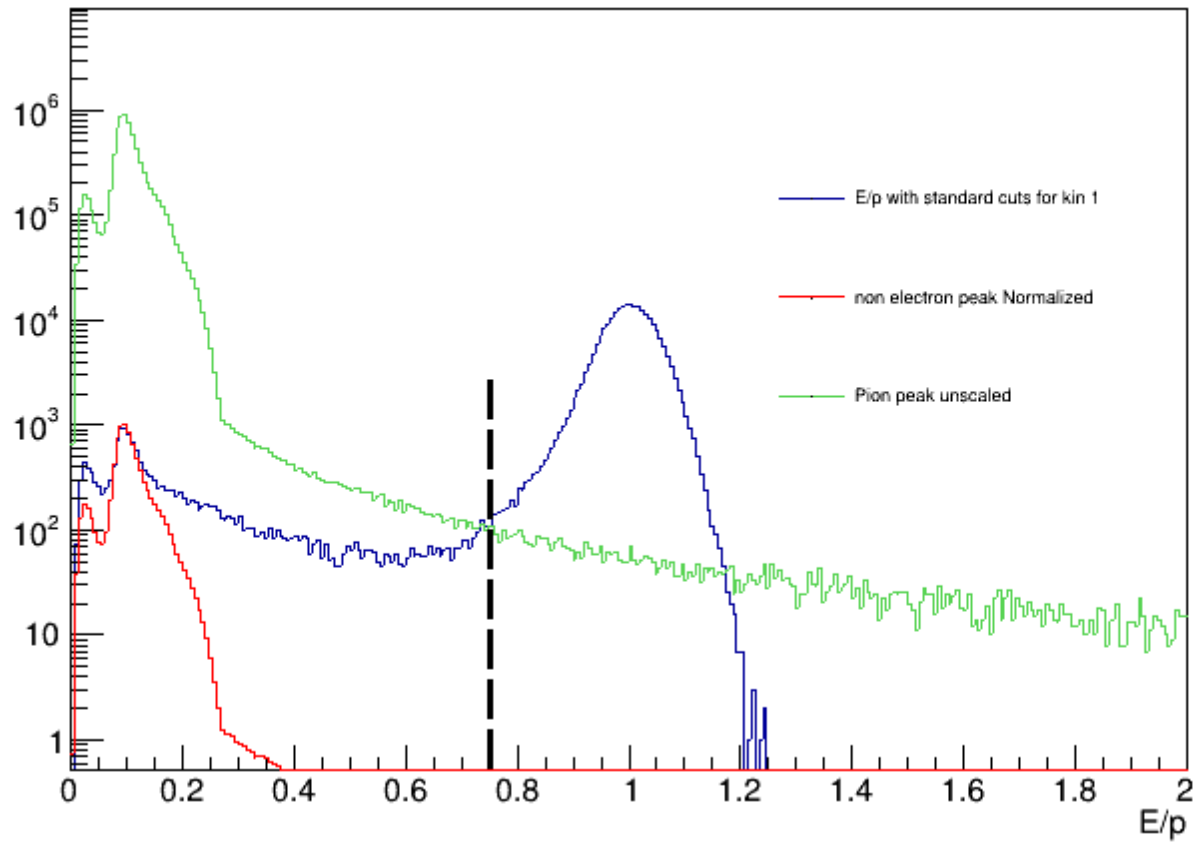


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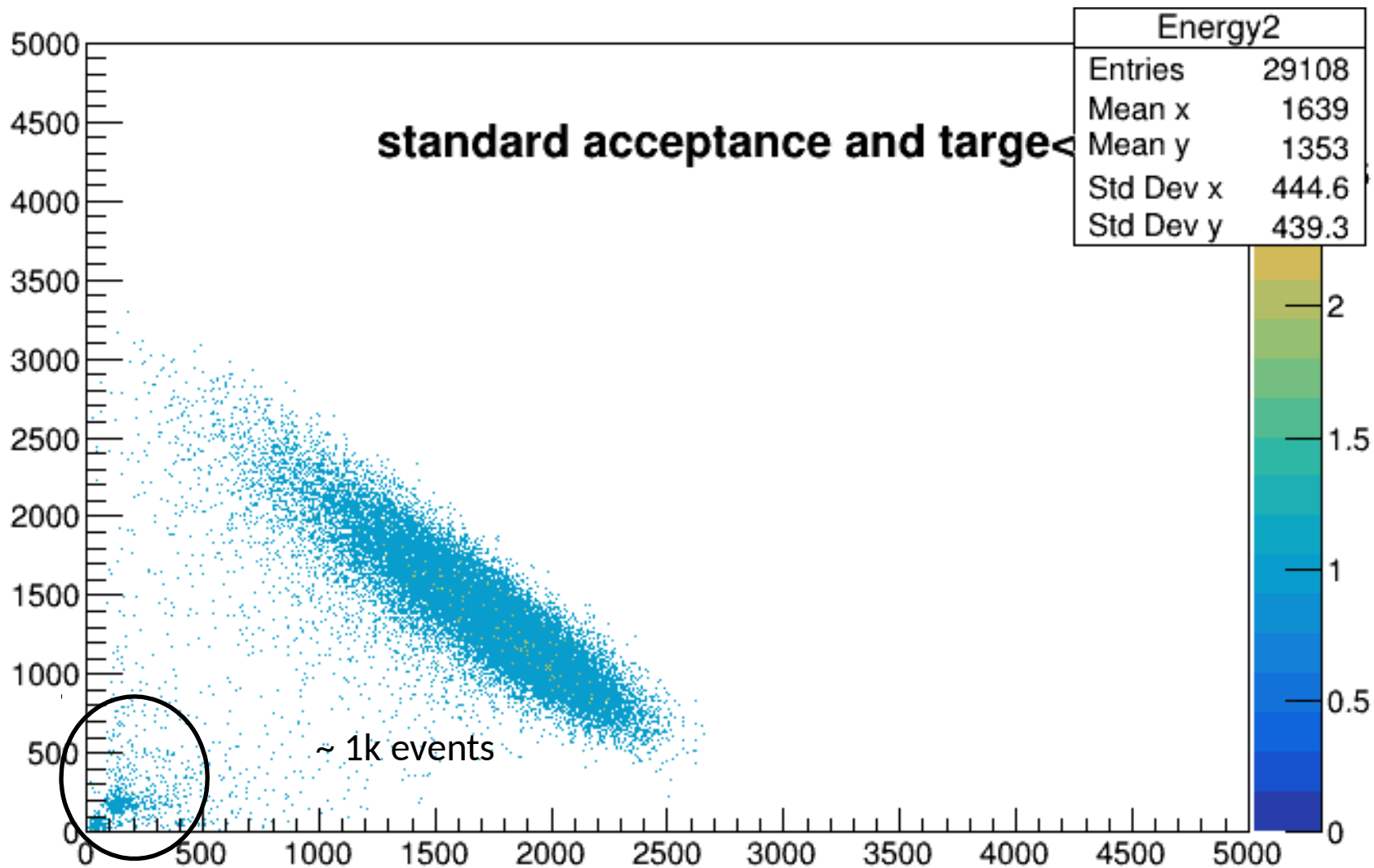
H3/D2 ratio : per nucleon



E/p with standard cuts for kin 1



Standard cuts including target z $\text{abs}(\text{target } z) < 0.10$ and cherenkov sample



Tight acceptance cuts including target z $\text{abs}(\text{target } z) < 0.10$ and cherenkov sample

