

Acceptance Update

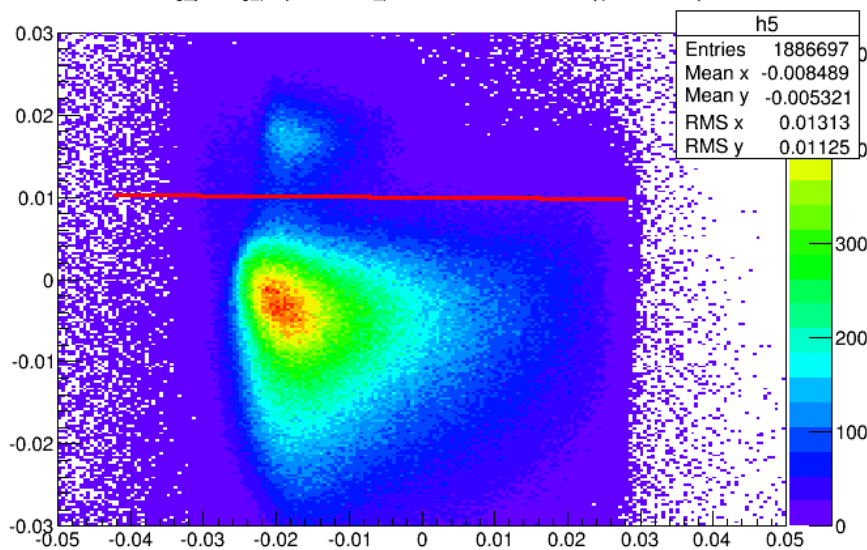
Min Huang

8/19/2015

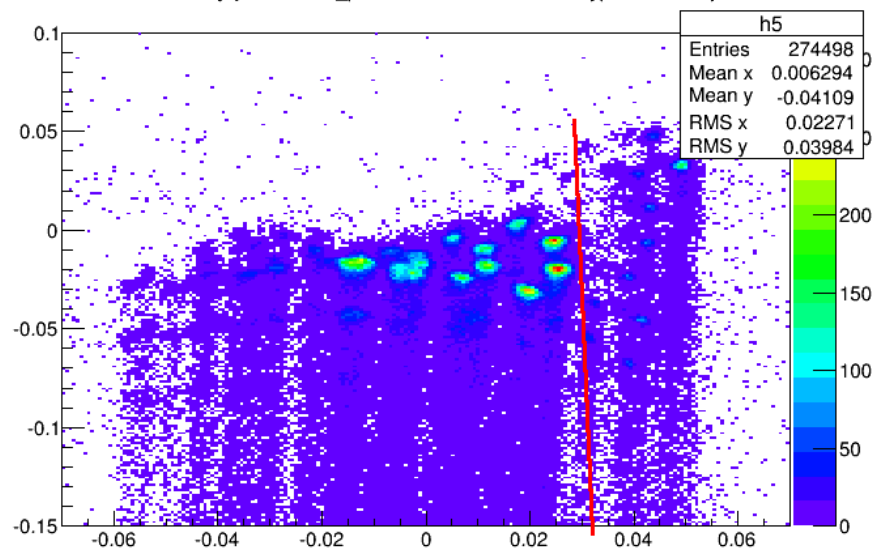
Acceptance

- 1.7 GeV, 2.5T trans, 3rd septum setting
- Test acceptance cuts using yield ratio of data to simulation
- $Y_{data} = \frac{N \cdot ps}{Q \cdot \epsilon_{det} \cdot LT}$
- $Y_{simu} = N_{tg} \sum_{event} \sigma_{model}^{rad} C_{det} \frac{(\Delta E' \Delta \Omega)^{gen}}{N_{gen}}$
- Dilution run HRS $p_0 = 1.1$ GeV, $W \sim 1.4$ GeV
- Tried different cuts

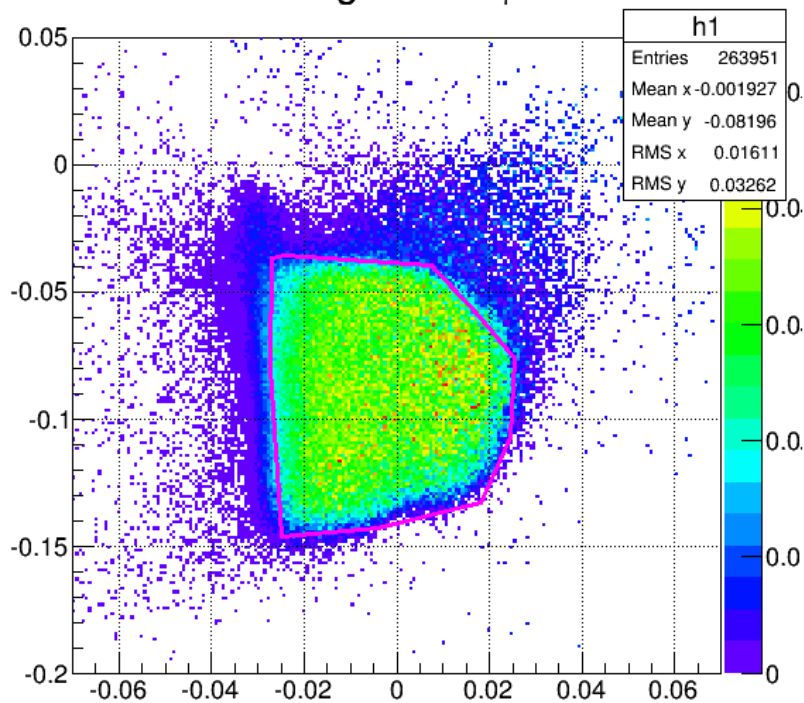
L.tr.tg.y:L.tr.tg.ph {L.cer.asum_p>250&&L.tr.n==1&&DL.evtypebits>>3&1}



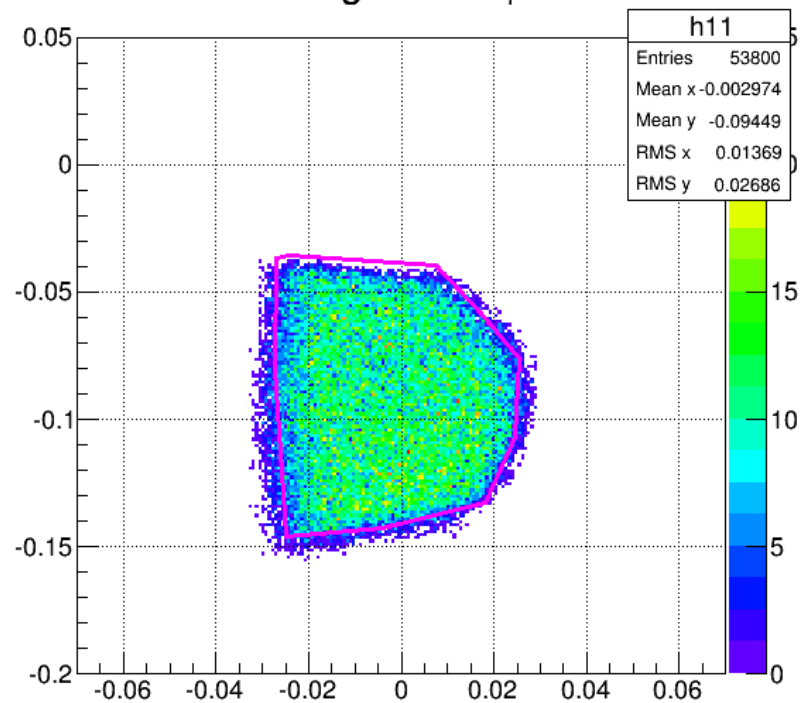
L.tr.x:L.tr.y {L.cer.asum_p>250&&L.tr.n==1&&DL.evtypebits>>3&1}



Target θ vs. ϕ

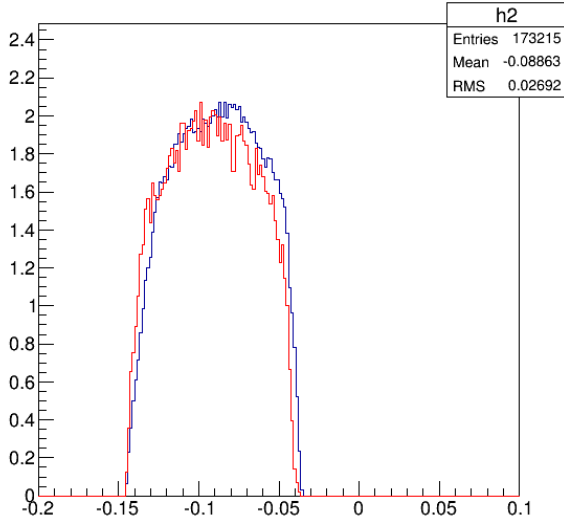


Target θ vs. ϕ

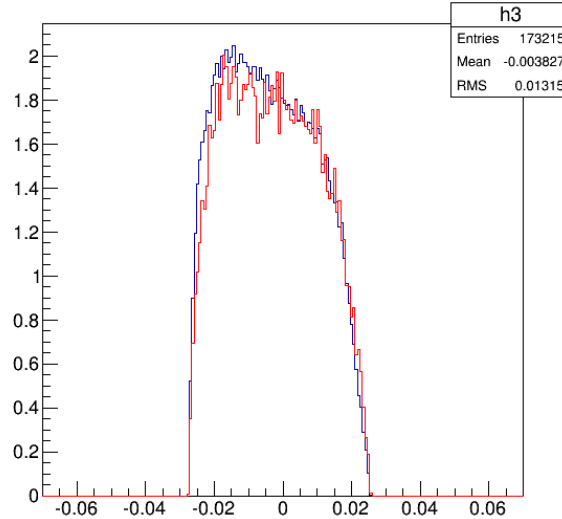


Acceptance

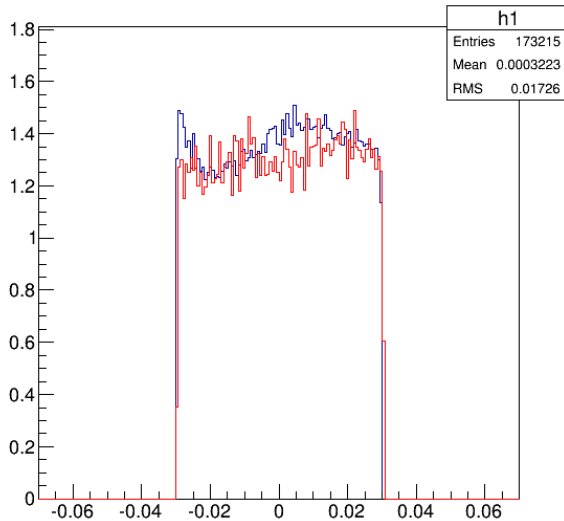
Target θ



Target ϕ



δ



Blue: data

Red: simulation

#4423 p0=1.0966 dilution run with empty target, rasters on

Cut ID 1

Cuts on data

L.tr.tg_y < 0.01

L.tr.y < 0.03

Angular graphic cut

Abs(L.rec.d.p) < 0.03

Cuts on simu

Transport apertures

Angular graphic cut

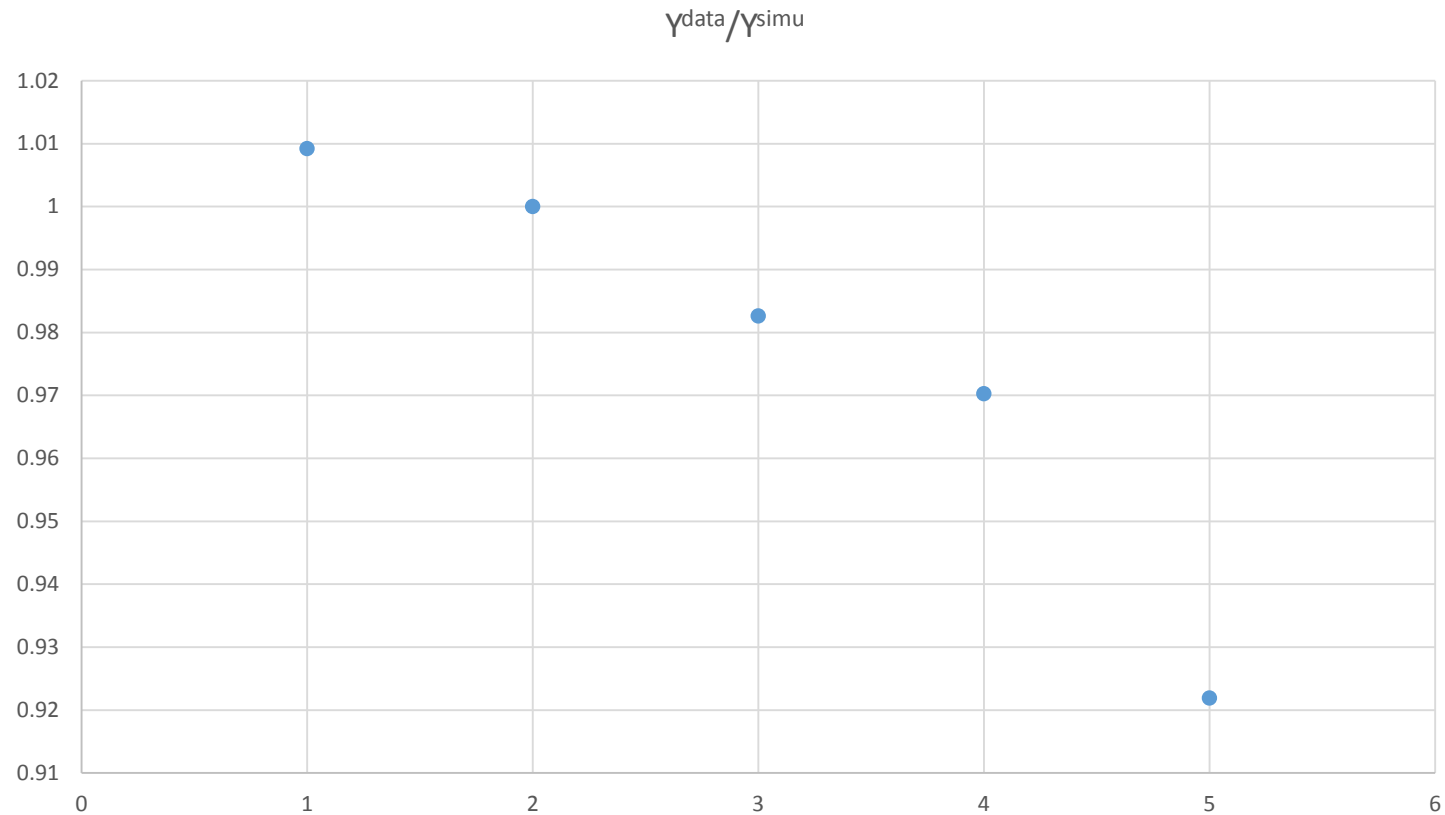
abs(bwd.tp.rec.d) < 0.03

Eloss_tot < 0.01

Cuts

- ID 2: $\theta \in (-0.12, -0.08)\text{rad}$, $\phi \in (-0.02, 0.02)\text{rad}$, $\text{abs}(\delta) < 0.03$
- ID 3: $\theta \in (-0.15, -0.05)\text{rad}$, $\phi \in (-0.03, 0.03)\text{rad}$, $\text{abs}(\delta) < 0.03$
- ID 3: $\theta \in (-0.15, -0.05)\text{rad}$, $\phi \in (-0.03, 0.03)\text{rad}$, $\text{abs}(\delta) < 0.035$
- ID 3: $\theta \in (-0.15, -0.05)\text{rad}$, $\phi \in (-0.03, 0.03)\text{rad}$, $\text{abs}(\delta) < 0.04$

Ratio



- Use ID 2 as reference (smallest acceptance cut)
- Will use ID 1 or 2 as cut definition in the next step

Next

- Calculate yield on W bins
- Suggestions from this meeting?