

Detector Configuration and Data Set

- Detector configuration: Bryce Canyon
- Particle Generation Details
 - Fixed kinematic settings: ϕ, θ, p
 - Shoot π^-
 - Repeat many times
 - Spread in distributions give parameter resolutions
 - No angular smearing applied

θ_{rec} Dependence

- Peak-to-peak separation within a kinematic setting were constant.
- Some η dependence between forward/backward, central, and the transition regions
- Some momentum dependence between low, mid, and high momentum. More so in the central region.

Peak separation at various θ settings for fixed $p = 5.5 \frac{GeV}{c}, \phi = 30^\circ$

$ \eta $	Peak Separation [mrad]
1.50	0.15
1.25	0.23
1.00	0.34
0.50 -- 0.00	0.1

Peak separation at various θ settings for fixed $\eta = 0.10, \phi = 30^\circ$

$p \left[\frac{GeV}{c} \right]$	Peak Separation [mrad]
0.4-0.5	~0.80
1-3	~0.1
5-12	~0.03

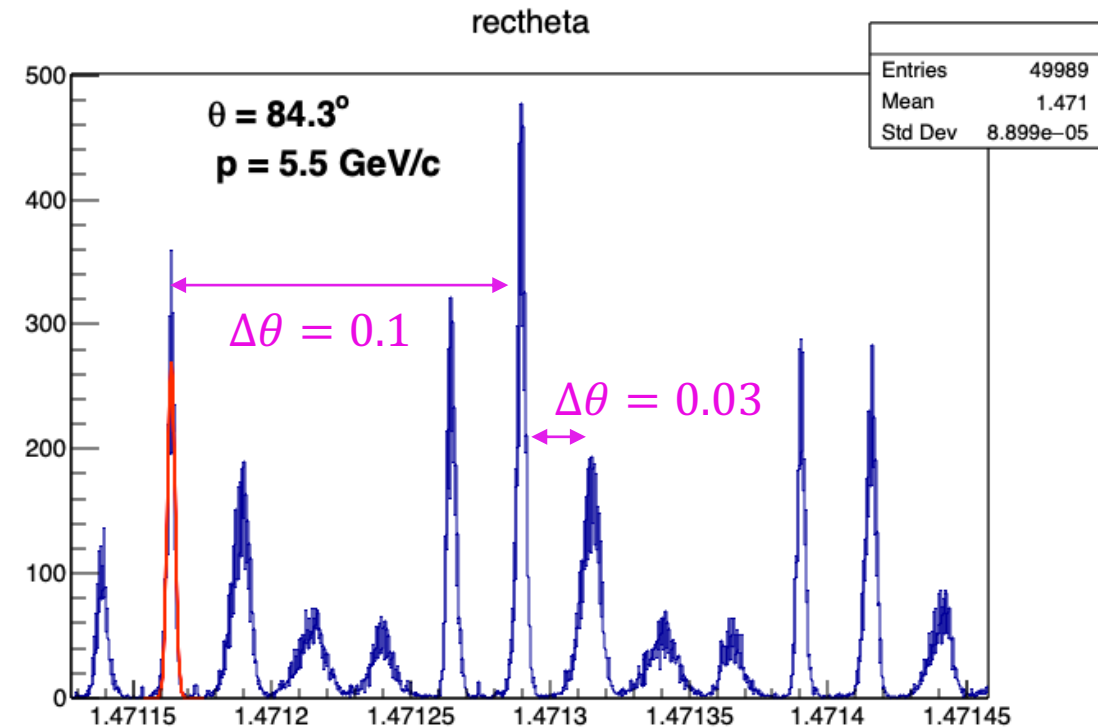
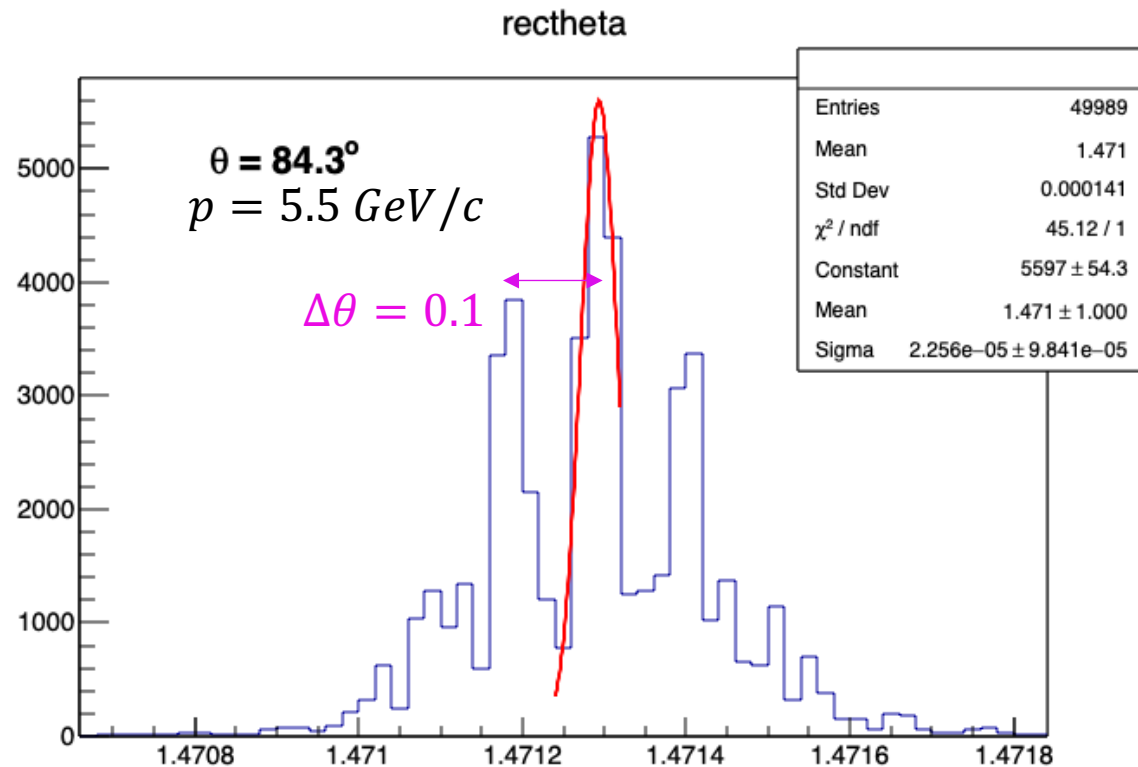
Peak separation at various θ settings for fixed $\eta = 1.50, \phi = 30^\circ$

$p \left[\frac{GeV}{c} \right]$	Peak Separation [mrad]
0.4-0.5	Low stats
3-18	~0.15

*see next slide

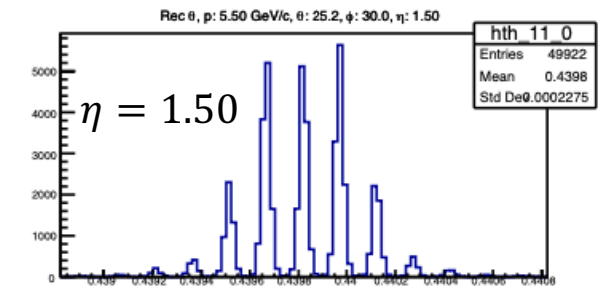
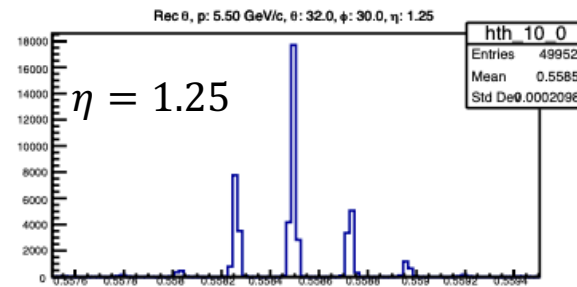
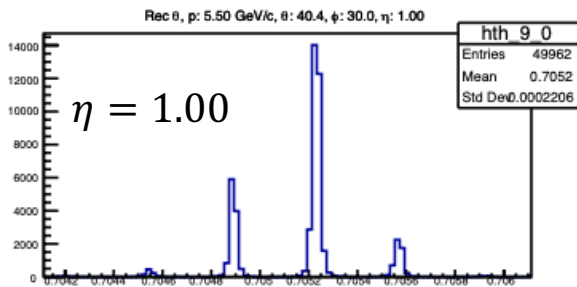
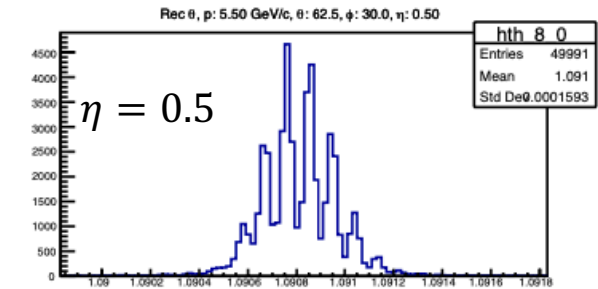
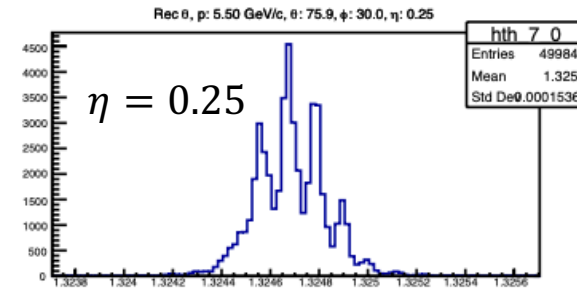
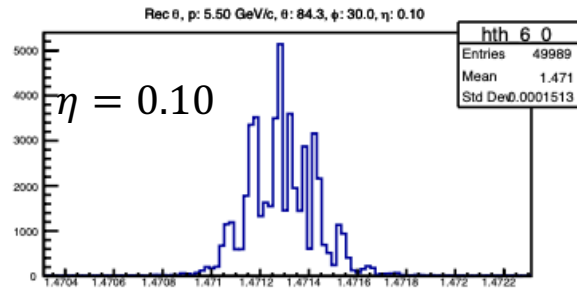
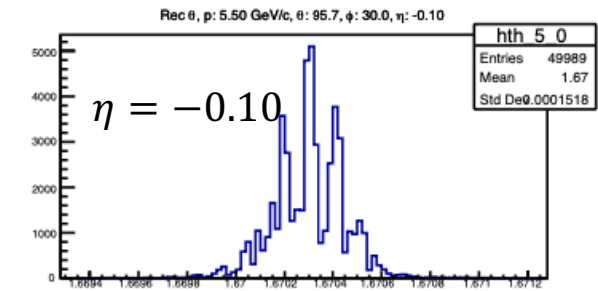
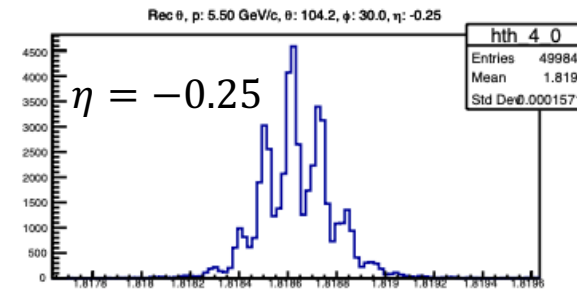
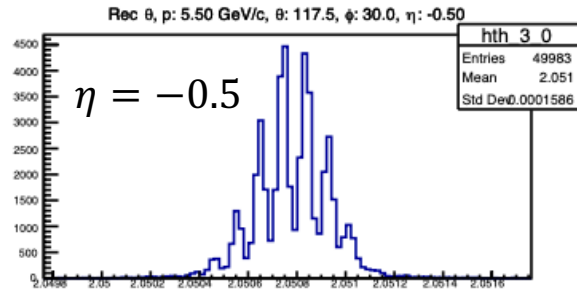
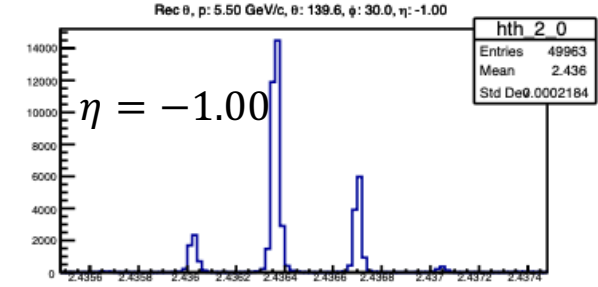
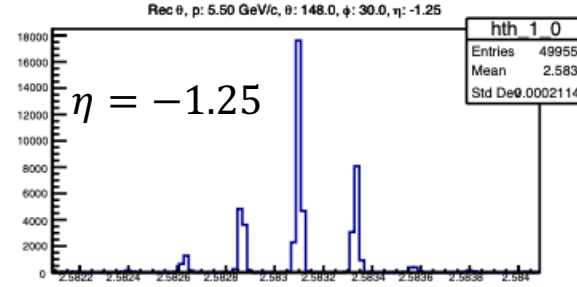
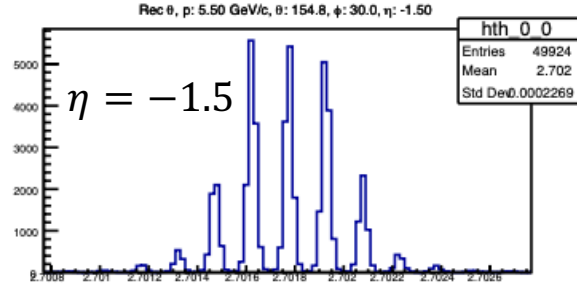
θ_{rec} Dependence

- Finer binning shows additional structure.
- $[\Delta\theta] = mrad$

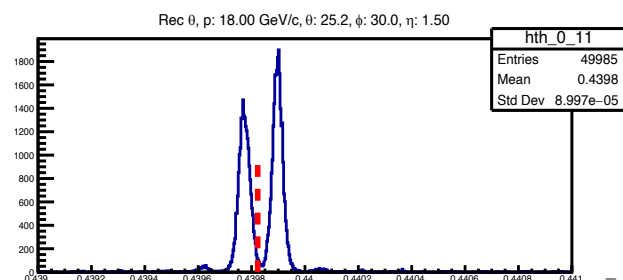
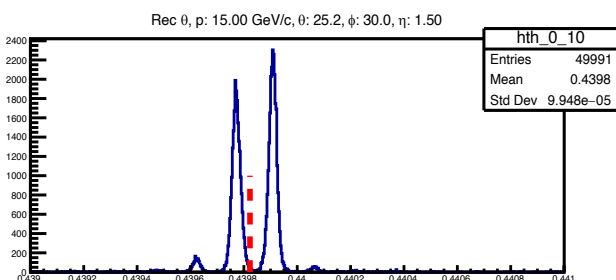
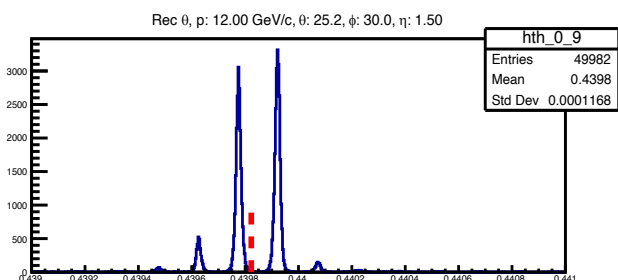
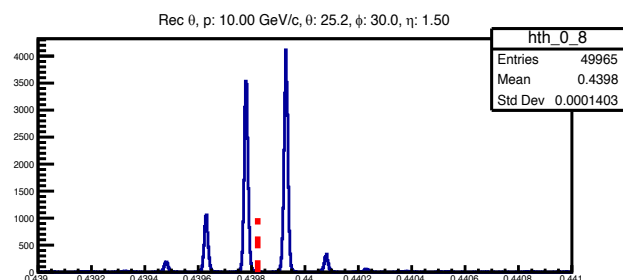
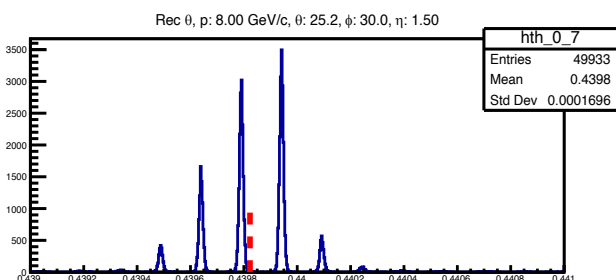
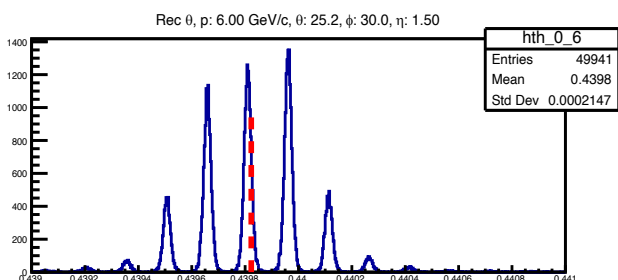
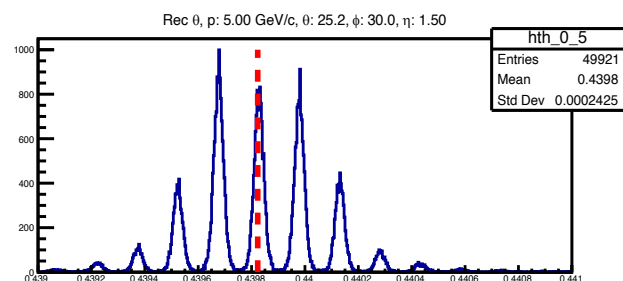
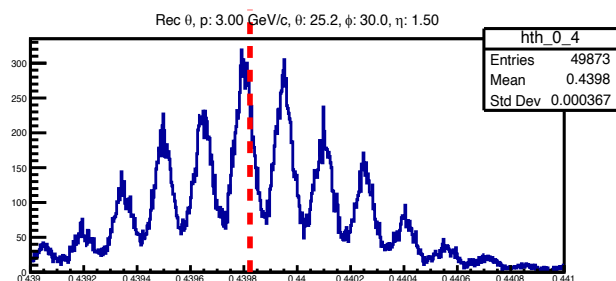
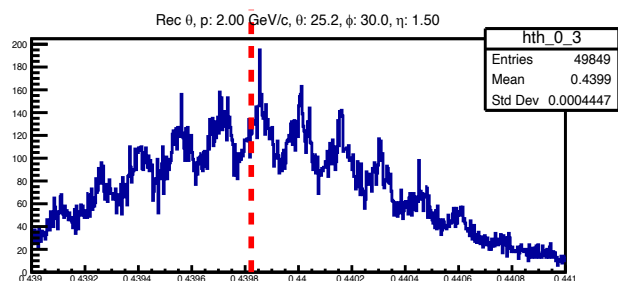
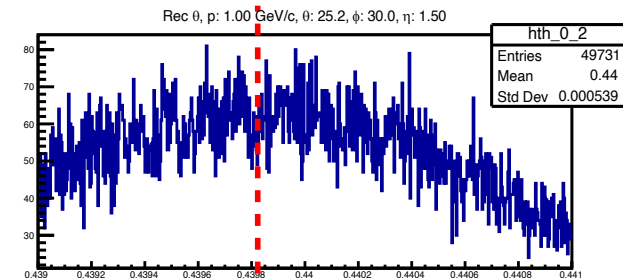
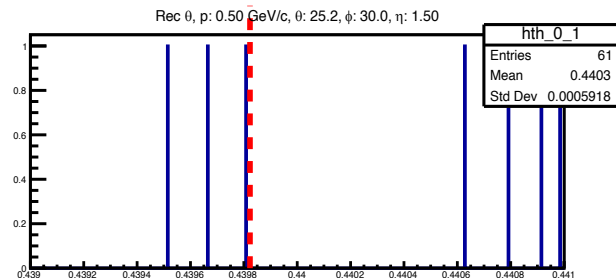
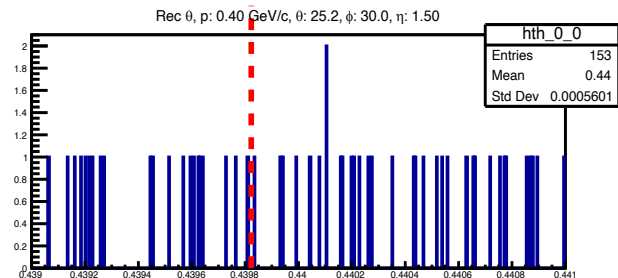


Same, different bin widths

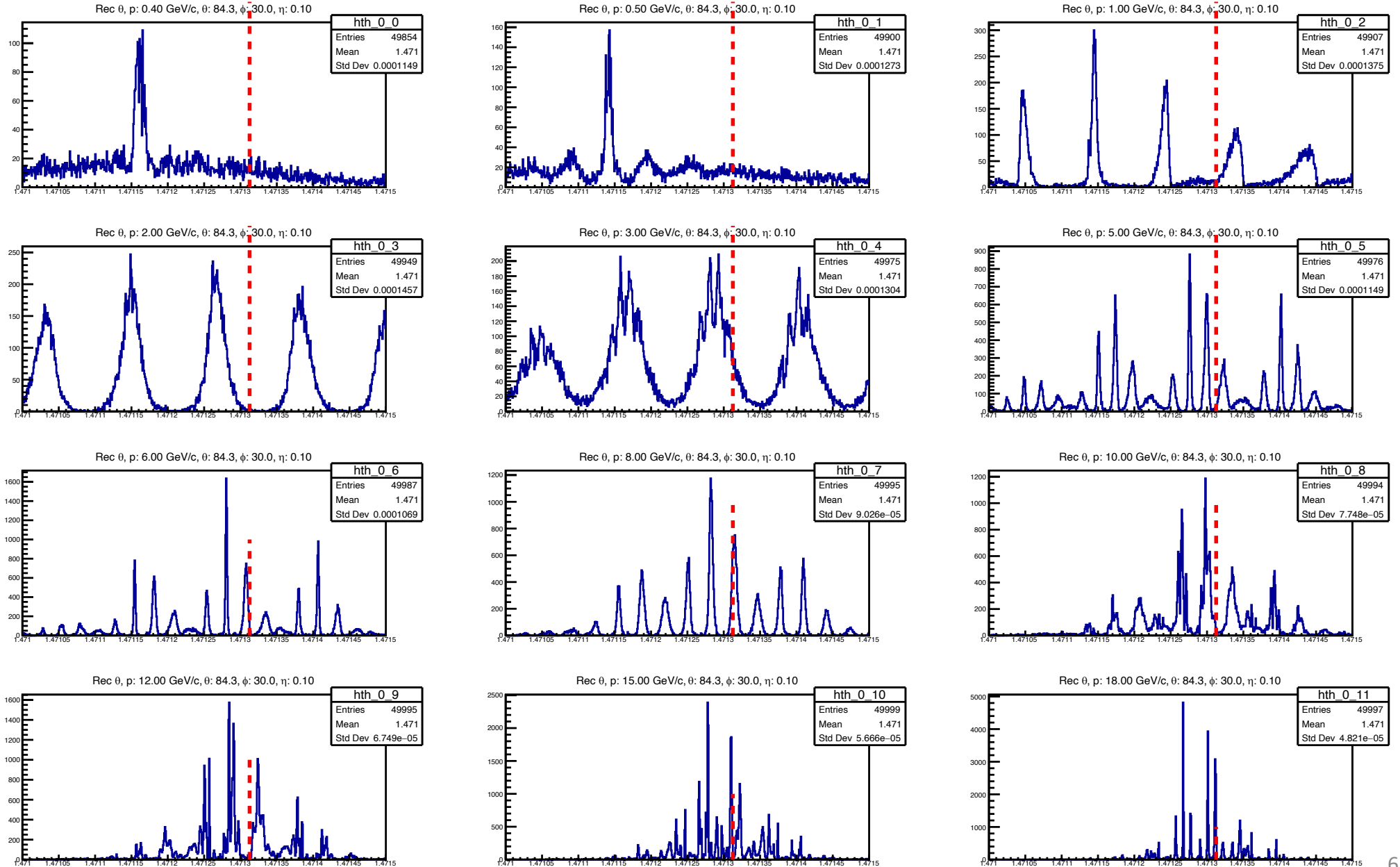
$\theta_{rec} \eta$ Dependence: My Sim ($\phi = 30^\circ, p = 5.5 \text{ GeV}/c$ $\theta = \text{fixed}$)



$\theta_{rec} p$ Dependence: My Sim ($\phi = 30^\circ, \eta = 1.50, \theta = 25.2$)



$\theta_{rec} p$ Dependence: My Sim ($\phi = 30^\circ, \eta = 0.1, \theta = 84.3$)



$\theta_{rec} p$ Dependence (Adjust Range): My Sim ($\phi = 30^\circ, \eta = 0.1, \theta = 84.3$)

