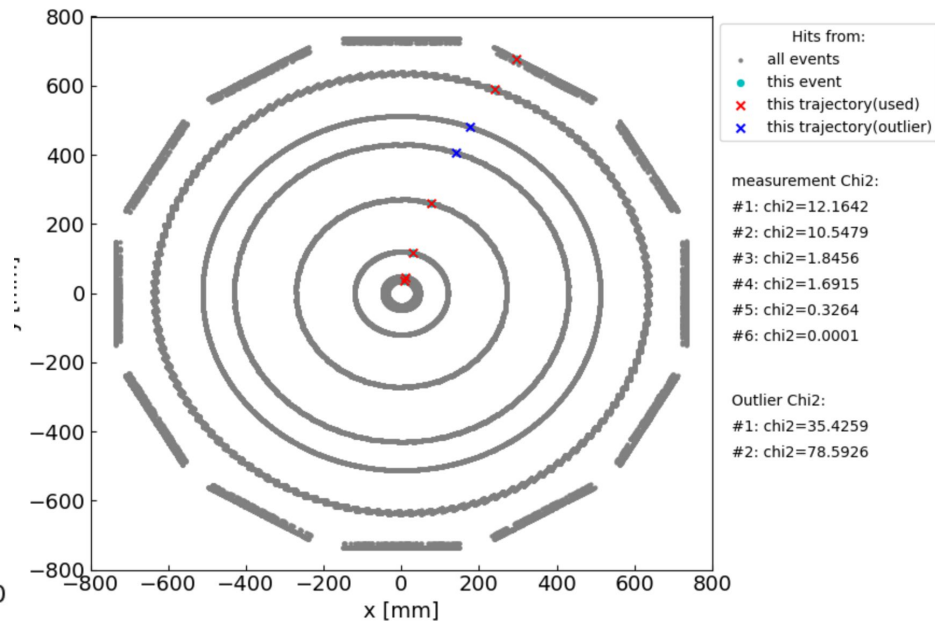
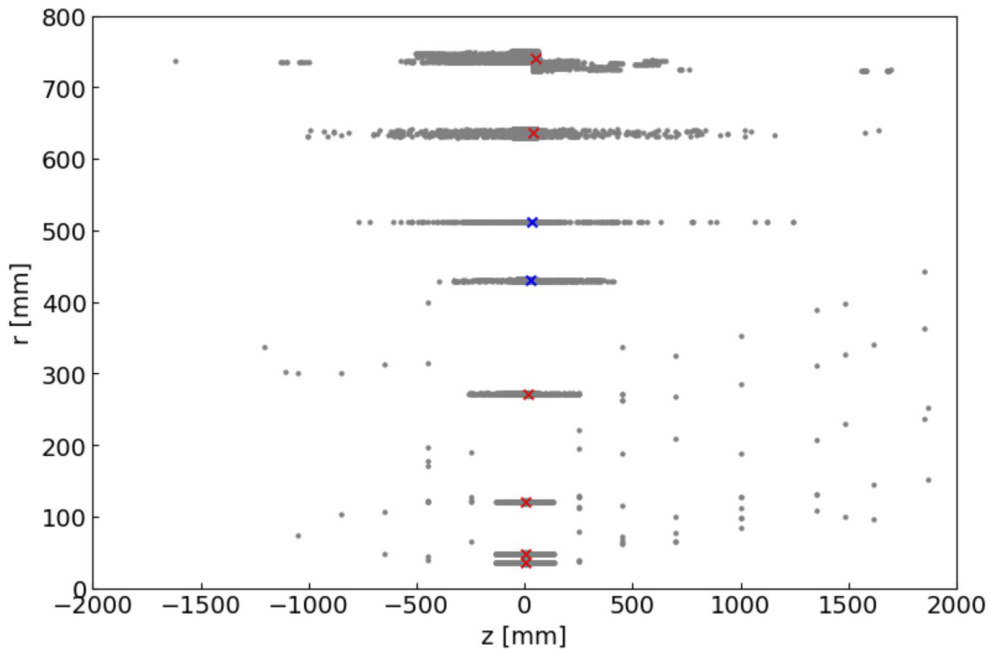


Chi2 Study Updates

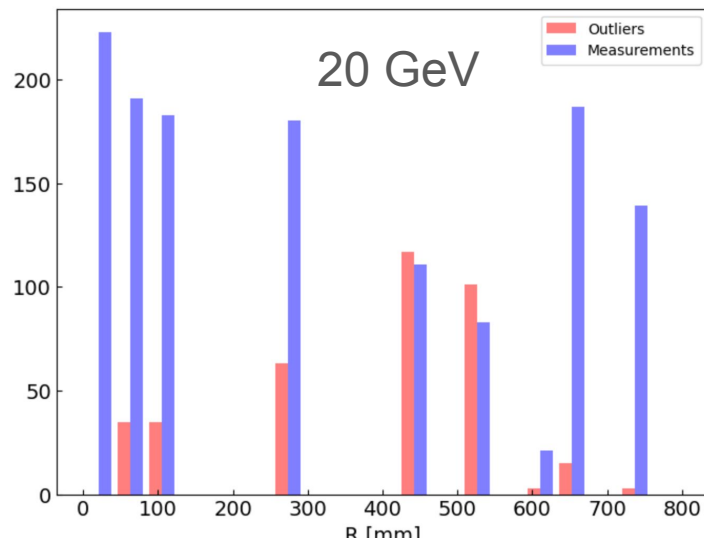
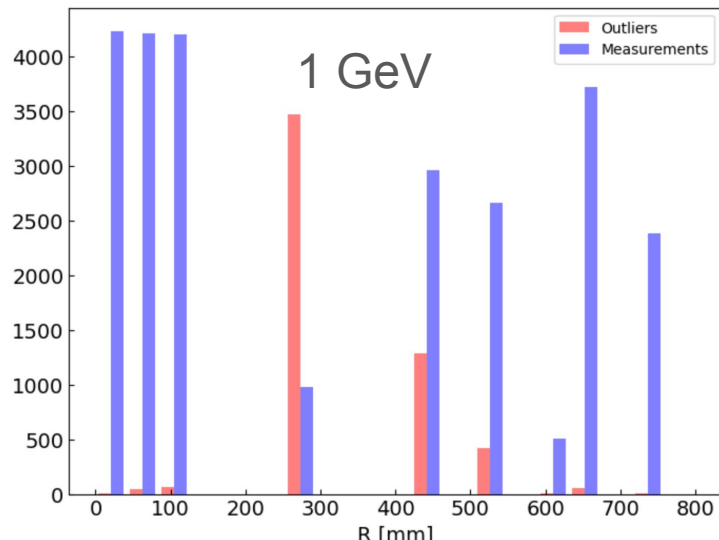
Shujie Li
March 05, 2024

Outliers in Track Reconstruction

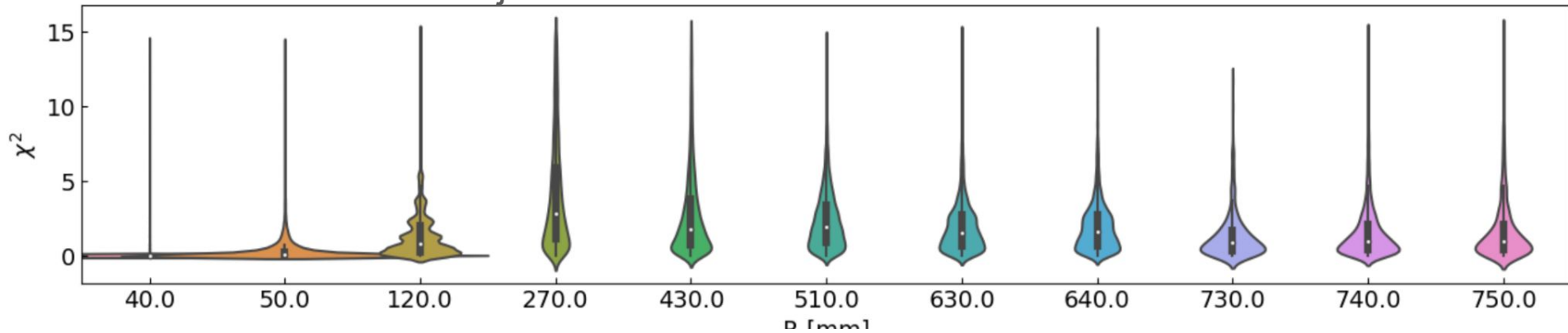


Outliers Distribution

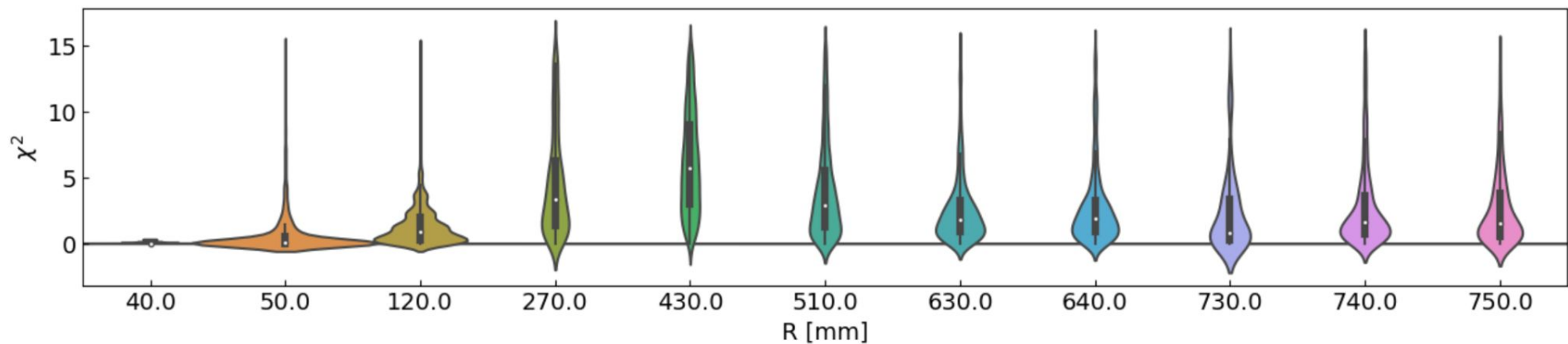
- Event samples:
 - single mu-, real seed, eta $\rightarrow 0$ (generated by Beatrice)
- Events with outliers:
 - 1/5/10/20 GeV: 1400/200/100/70
- For tracks with outliers, plot Measurements/Outliers v.s. R



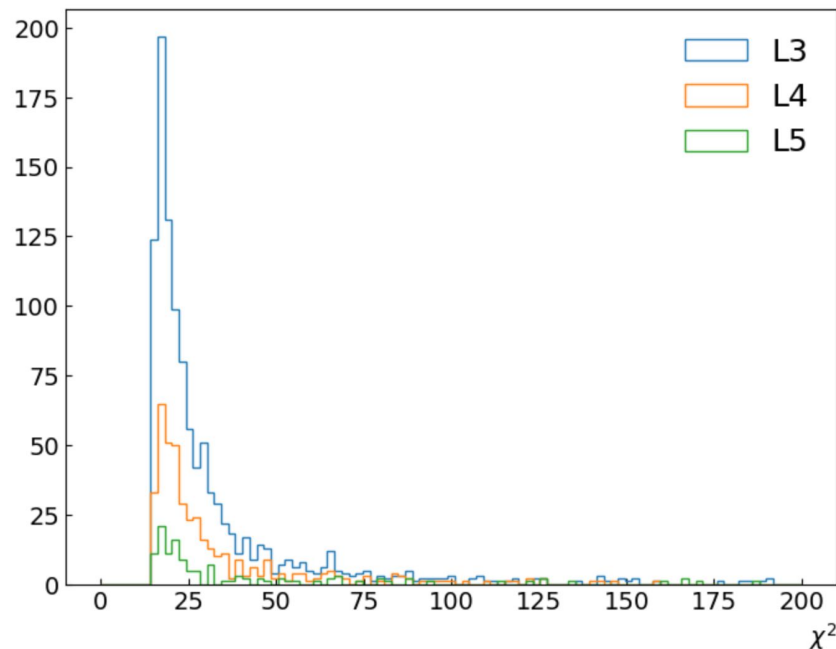
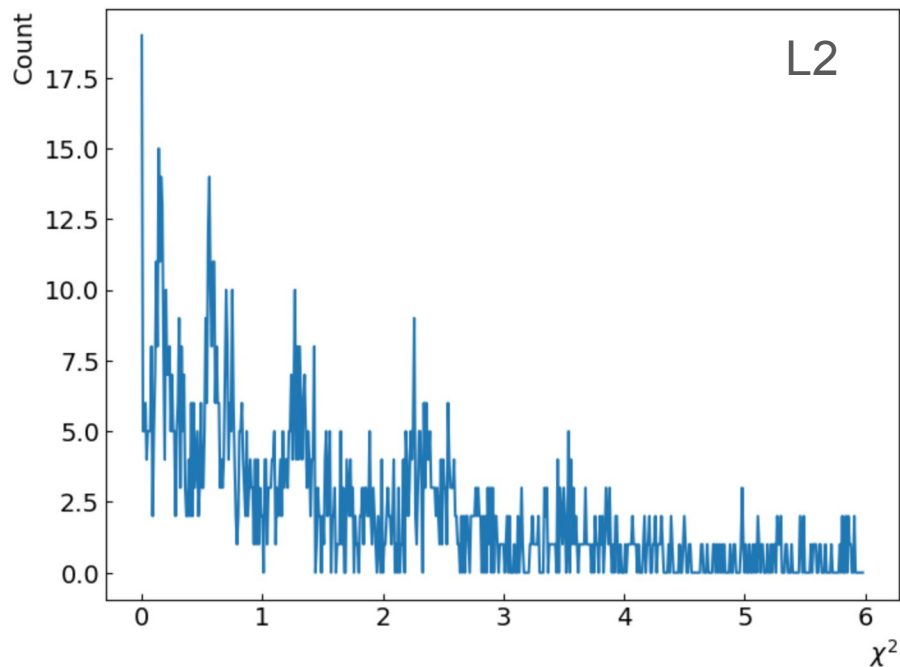
measurements from traj w/o outliers



measurements from traj w outliers

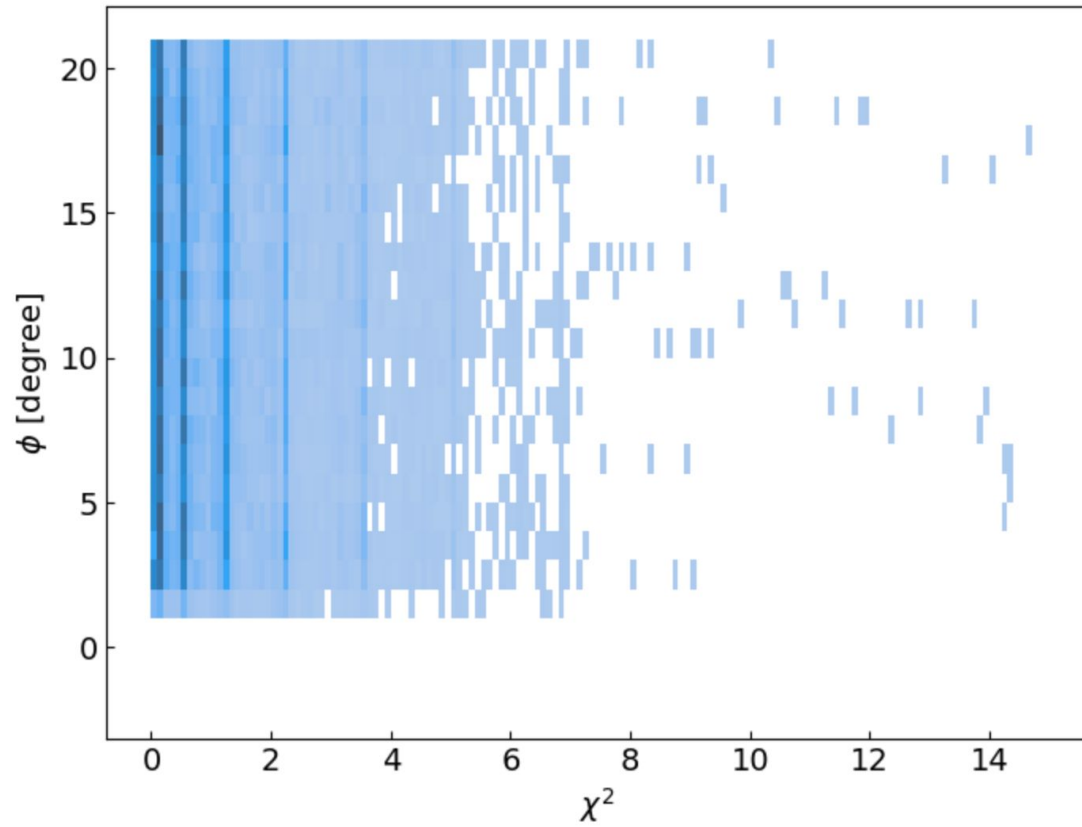


Chi2 from outliers



To do: increase chi2 cut from 15 to 50, and check track performance esp. with DIS+background

Chi2 vs phi



Pointing study on L2

Use a “Pointing” sample:

- 1 GeV, very narrow theta and phi range to check
- **chi2**
- **predicted** track position with track segment

Track projection:

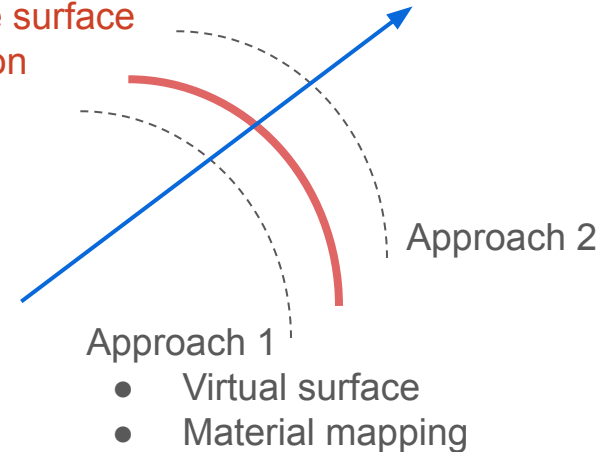
- **predicted**: based on track para from track finding
- **smoothed**: based on the final smoothed track after track recon

Chi2:

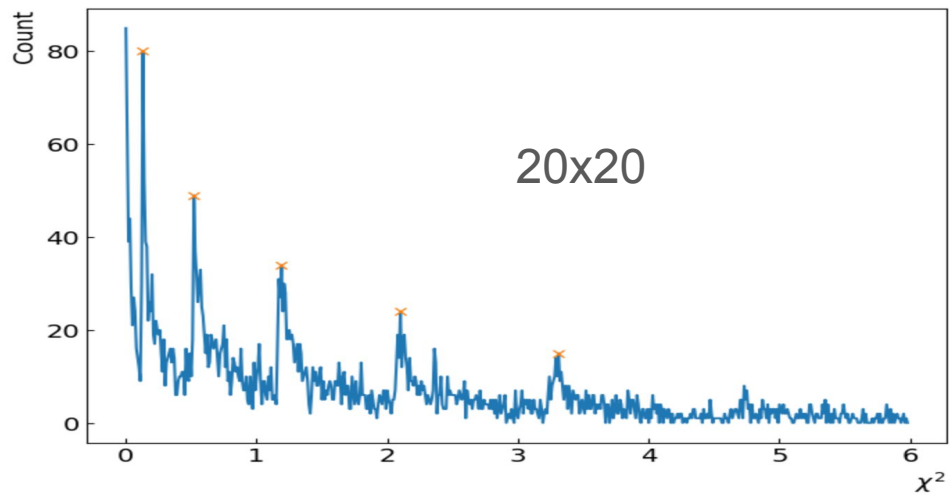
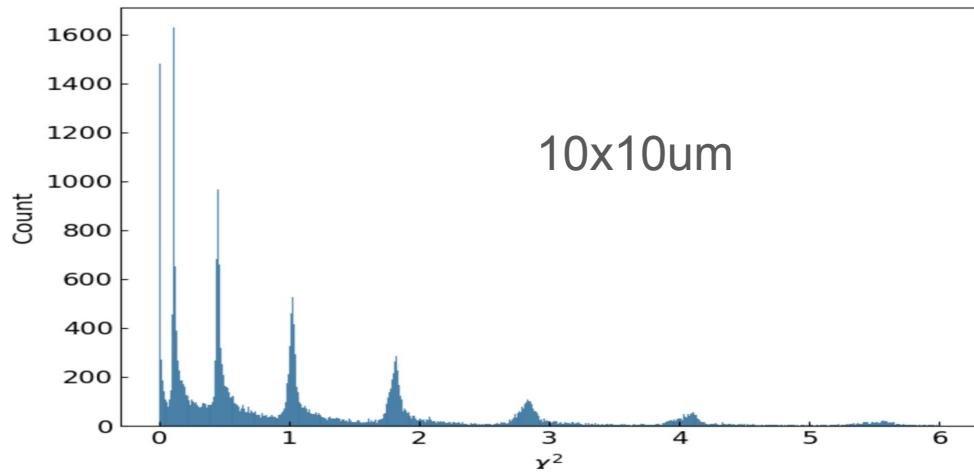
Calculated at the track finding stage to select measurements.

Representing surface (Approach 0)

- Sensitive surface
- digitization



Chi2 v.s. Pixel size



Projected z and theta per surface

