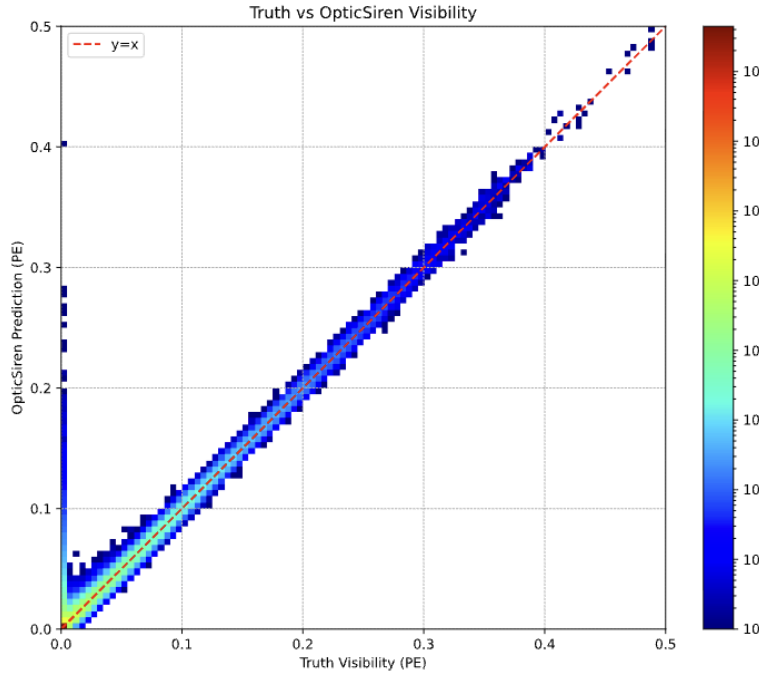


CIDEr weekly meeting

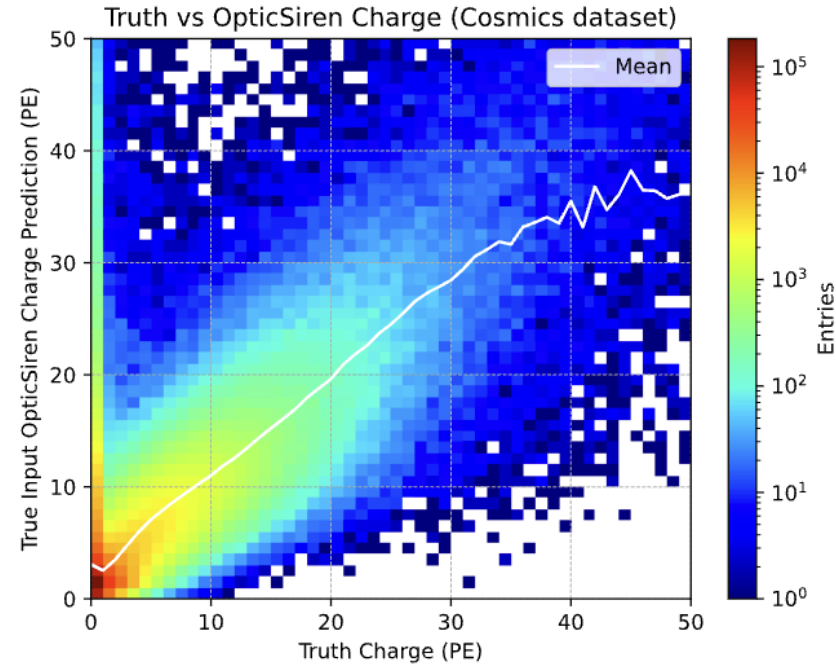
OpticSiren updates

Zhenxiong Xie

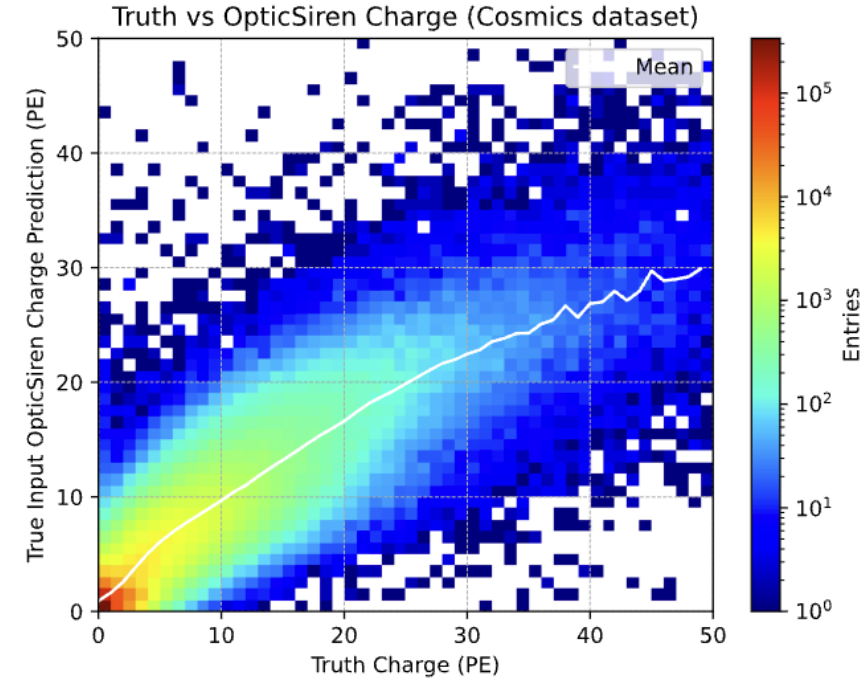
Additional Checking on True visibility vs OpticSiren prediction



Photon shotgun
Visibility vs OpticSiren prediction

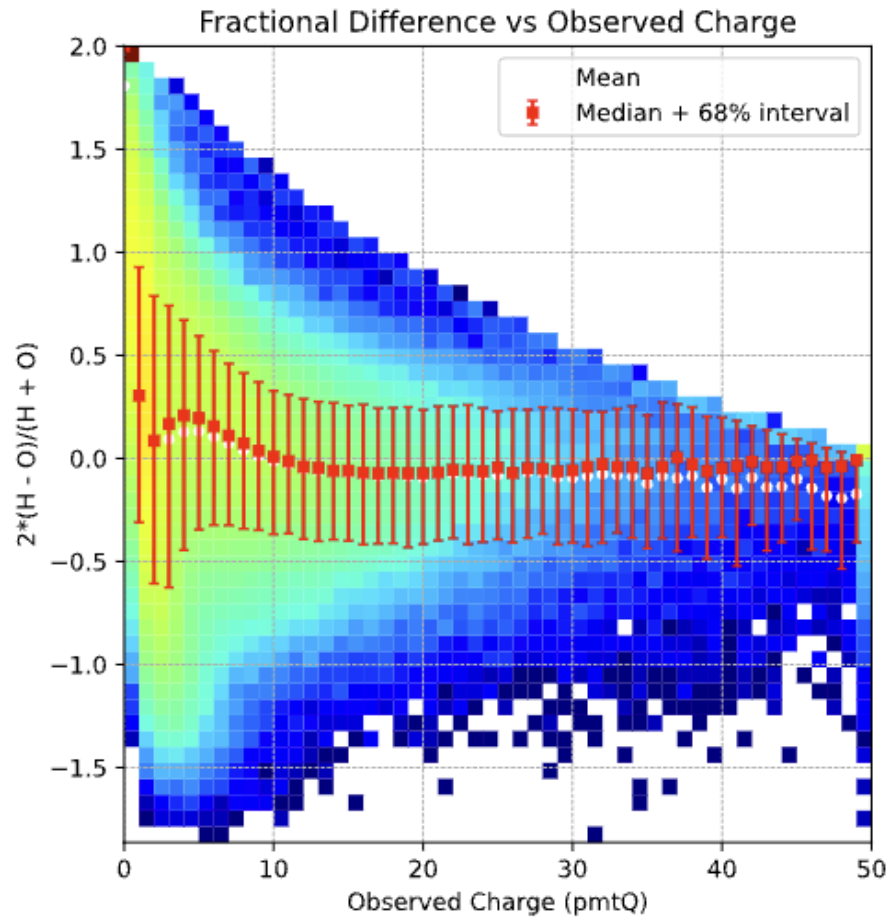


Pre-tune, cosmic
Geant4 P.E. vs OpticSiren prediction

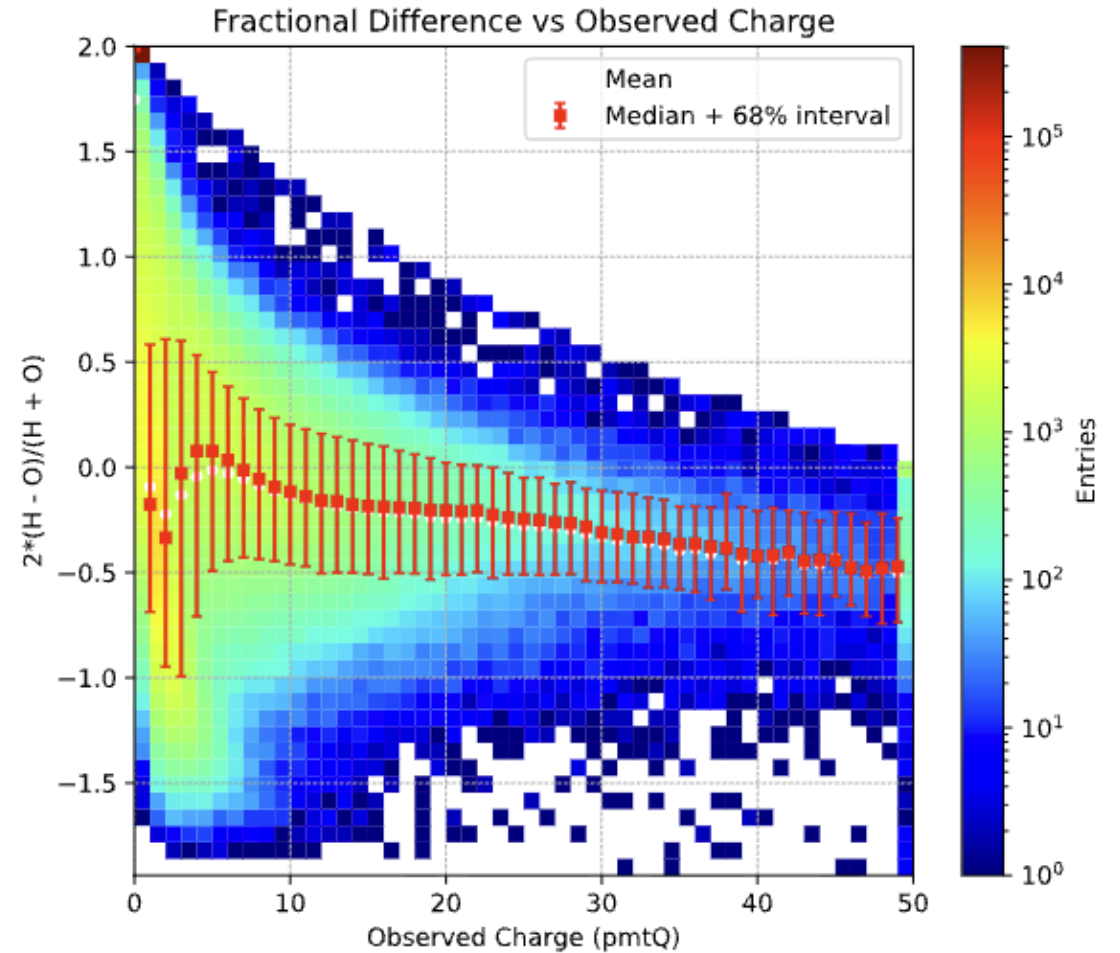


Post-tune, cosmic
Geant4 P.E. vs OpticSiren prediction

Corrected the fraction plots



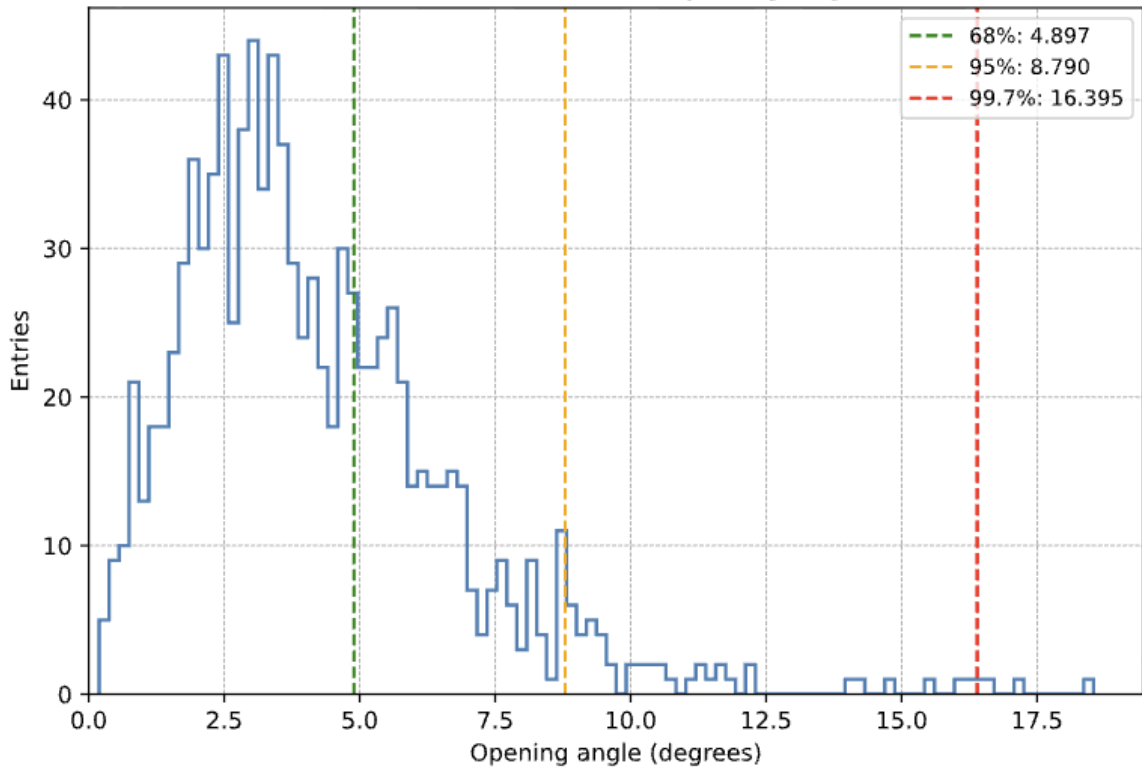
Pre-tune



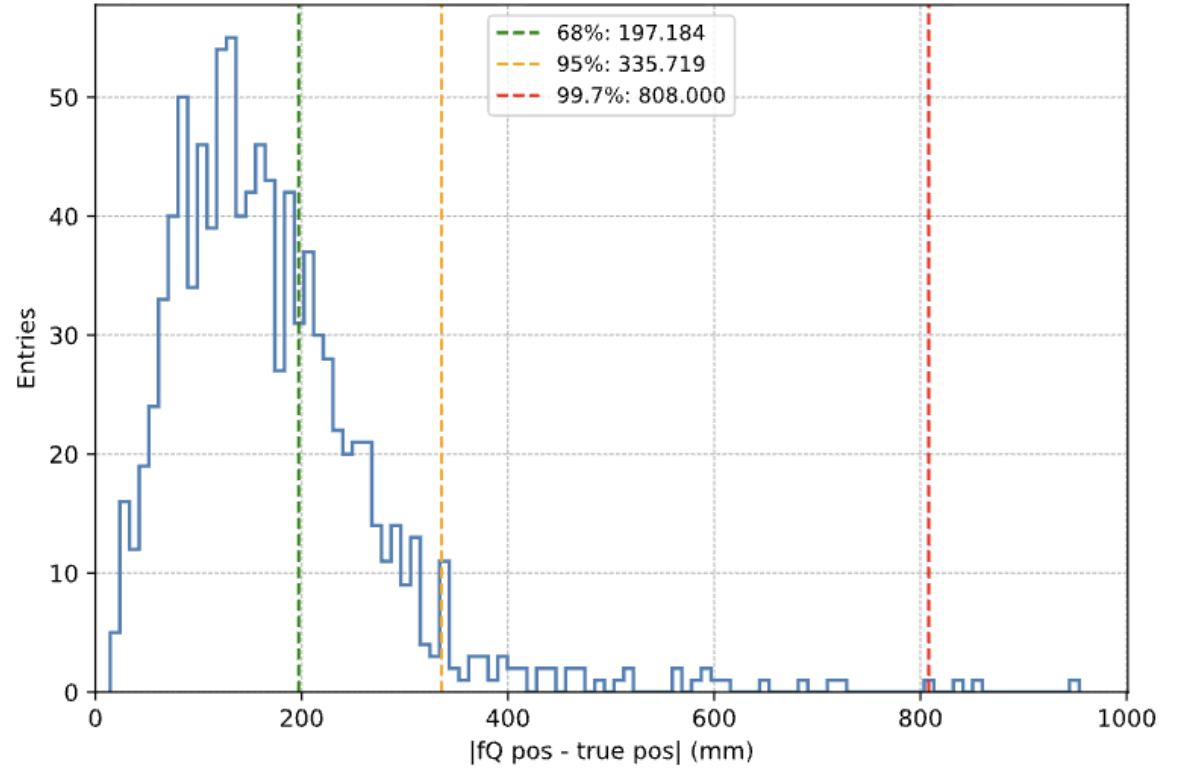
Post-tune

fiTQun bias

fiTQun Direction Bias (opening angle)



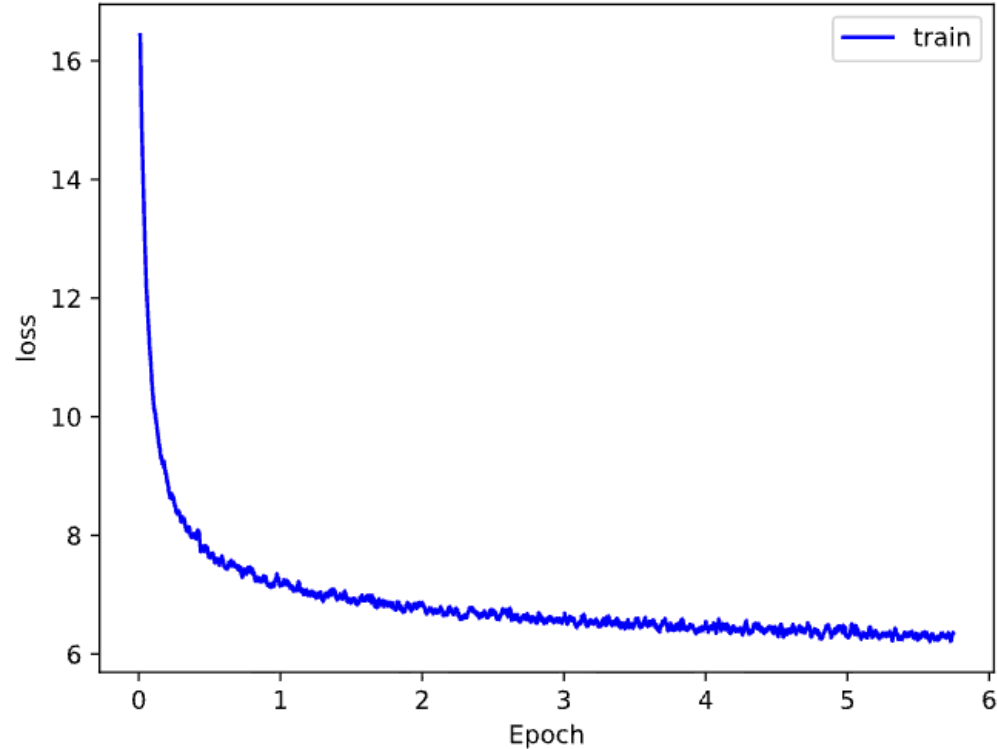
fiTQun Position Residual Magnitude



to-dos from last meeting

- Double check the first bin of the fraction plots
- After current training finishes, update plots with the latest results, including loss curves, information on training duration, and number of events used.
- Some comments on the plots
 - Use different line styles or marker styles in plots to facilitate comparison, so same color can be used to ease comparisons.
 - Check 68% intervals for reconstruction-true distributions to directly compare to chosen smearing values.
 - Overlay the fitQun curve with the 100 and 200 smearing curves to directly compare performance.
- Perform analysis using the OpticSIREN visibility map with point source (shotgun sample) instead of cosmic sample to check for bias in the OpticSIREN model.
- Investigate the effect of changing the sampling scheme (e.g., binning size) on results and report if significant changes are observed.

Training information of the updated cosmic muon tuning



Number of events generated in total: 100,000
Number of events for tuning: 27,978

selection cuts:

- number of PMT hits > 700
- Top/Total charge < 0.07
- $0.45 < \text{Barrel/Total charge} < 0.7$
- $0.25 < \text{Bottom/Total charge} < 0.5$