

Trajectory Info from ACTS Tracking Finding

Shujie Li
EIC group meeting
02.22.2022

eic::Trajectory:

Description: "Raw trajectory from the tracking algorithm"

Author: "S. Joosten, S. Li"

Members:

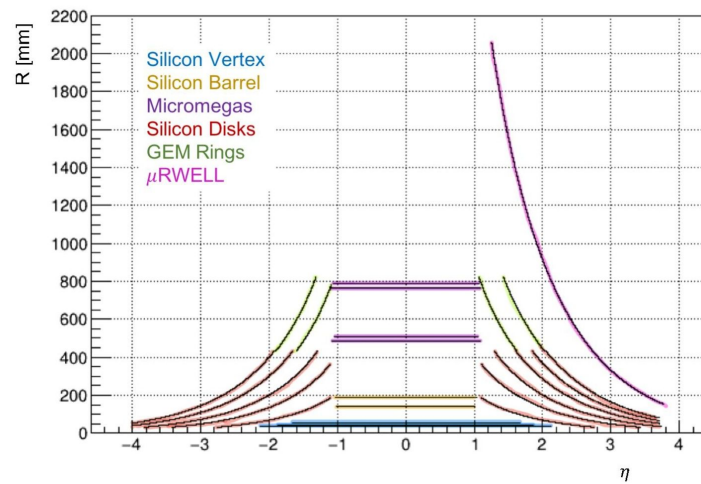
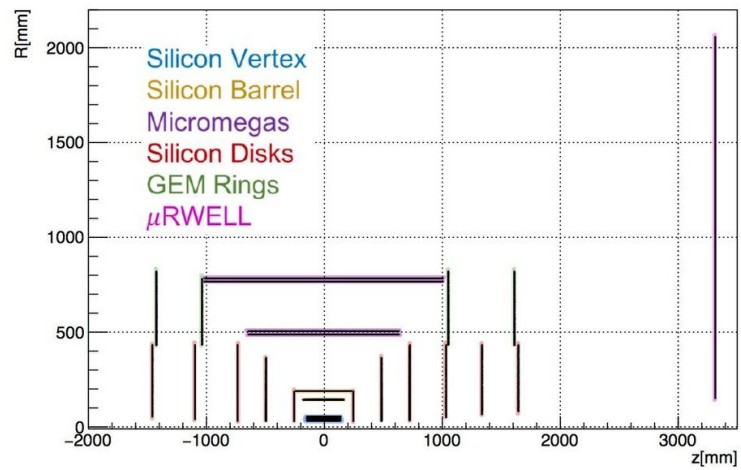
- uint32_t type // 0 (does not have good track fit), 1 (has good track fit)
- uint32_t nStates // Number of tracking steps
- uint32_t nMeasurements // Number of hits used
- uint32_t nOutliers // Number of hits not considered
- uint32_t nHoles // Number of missing hits
- float chi2 // Total chi2
- uint32_t ndf // Number of degrees of freedom
- uint32_t nSharedHits // Number of shared hits with other trajectories

VectorMembers:

- float measurementChi2 // Chi2 for each of the measurements
- float outlierChi2 // Chi2 for each of the outliers

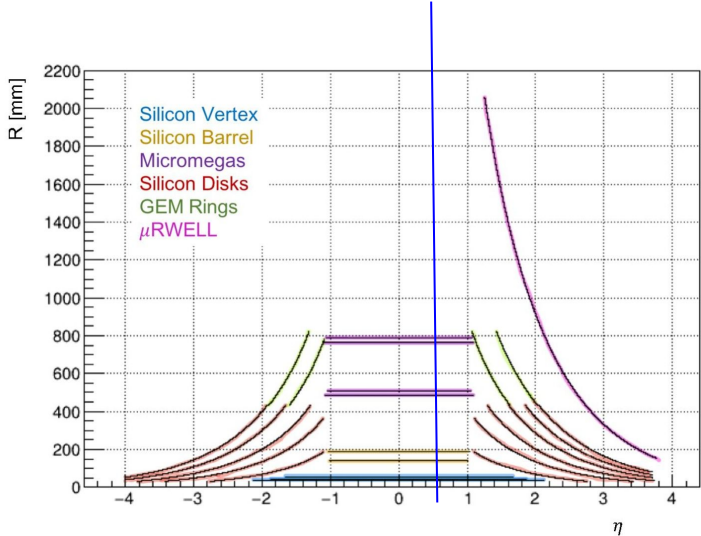
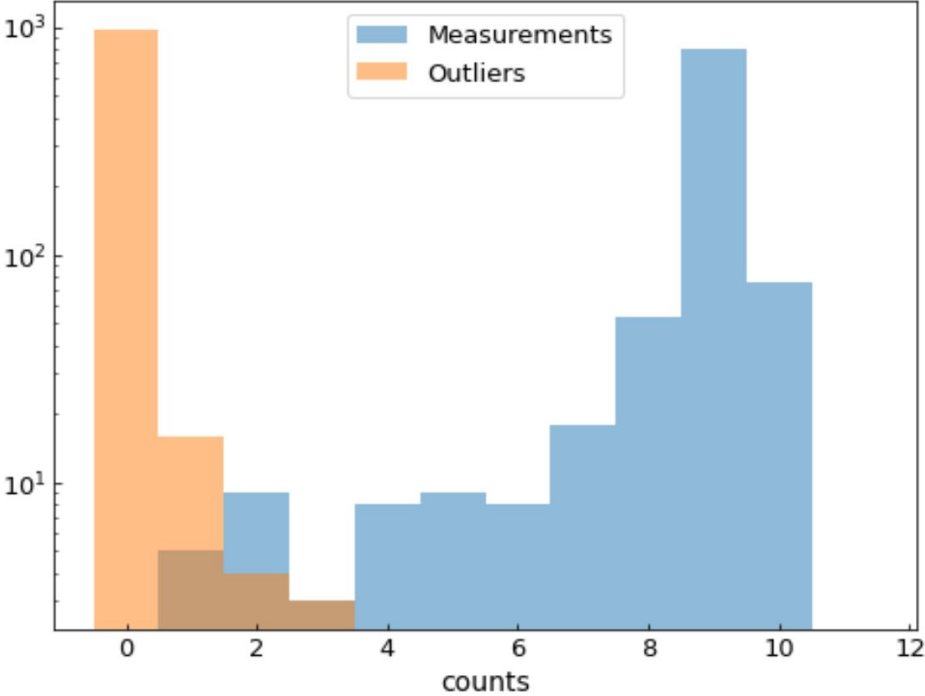
OneToManyRelations:

- eic::TrackerHit measurementHits // Measurement hits used in this trajectory
- eic::TrackerHit outlierHits // Outlier hits not used in this trajectory

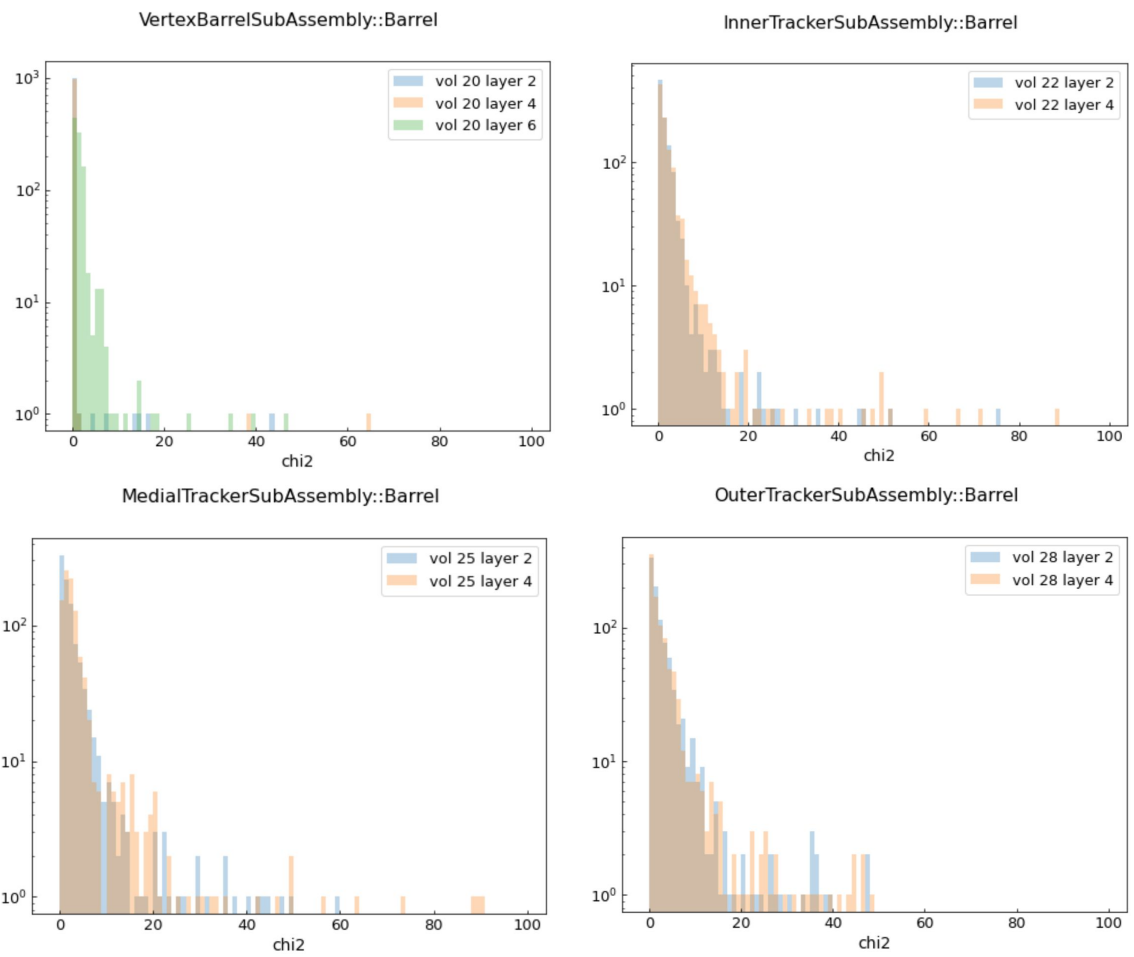


Pion, $p=1$ GeV, $\theta=62$ degree, $\eta = 0.5$, 1000 events

Hits per trajectory

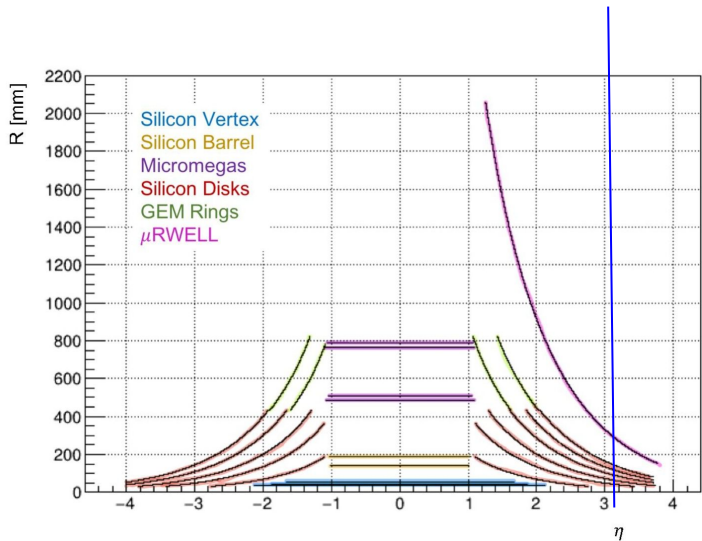
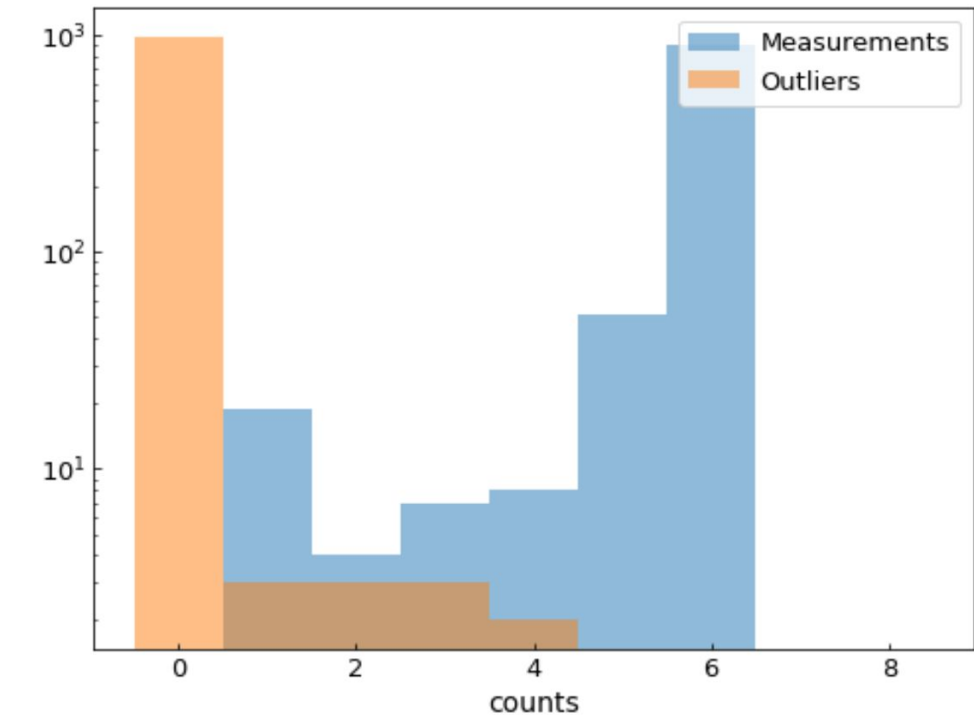


Chi2 per hit



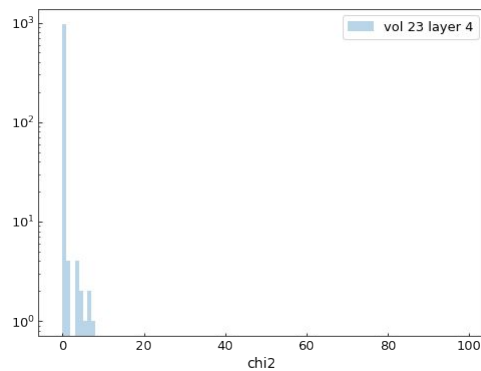
Pion, $p=10$ GeV, $\theta=5$ degree, $\eta = 3.1$, 1000 events

Hits per trajectory

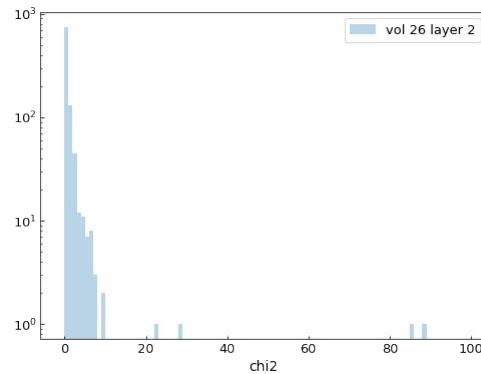


Chi2 per hit

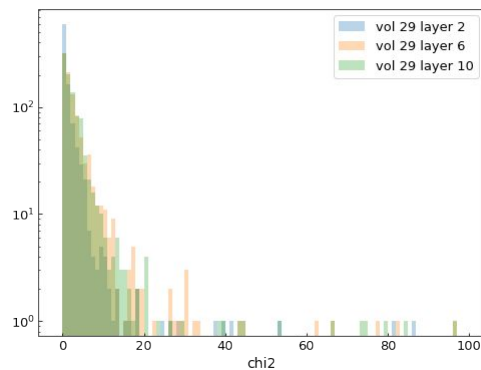
InnerTrackerSubAssembly::PositiveEndcap



MedialTrackerSubAssembly::PositiveEndcap



OuterTrackerSubAssembly::PositiveEndcap



ForwardBackwardTrackerSubAssembly::PositiveEndcap

