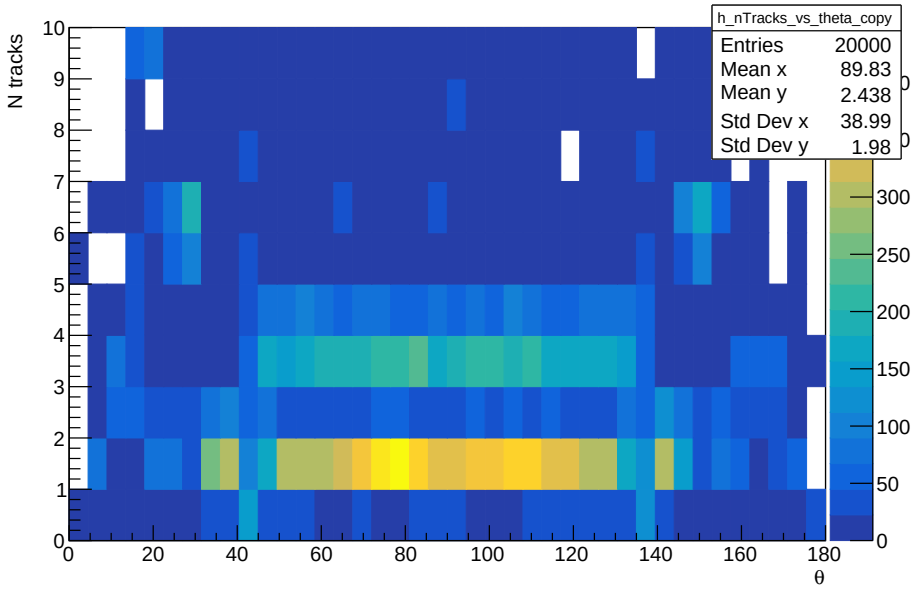
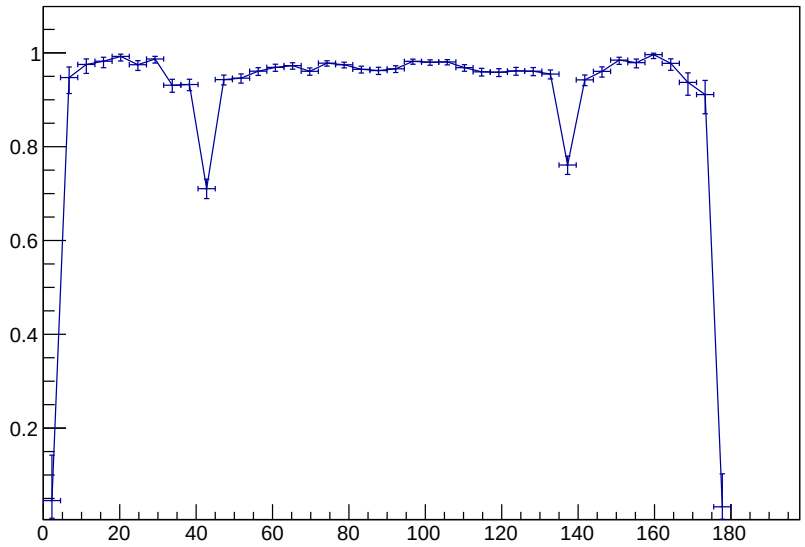
# Seeding PR


- https://eicweb.phy.anl.gov/EIC/juggler/-/merge_requests/494
- Merge is essentially ready, probably require some talking-to-people intervention
- For Juggler as of ACTS 19.9

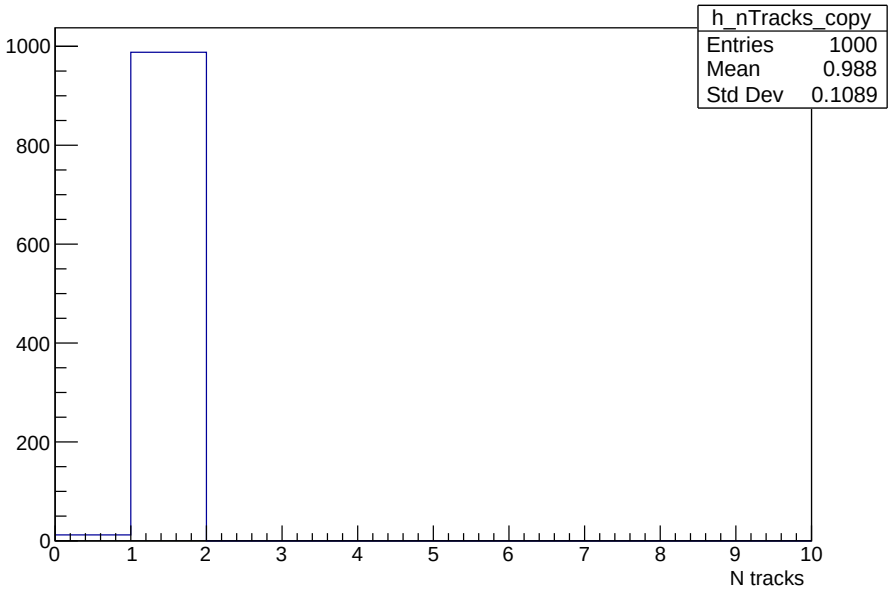
# Status

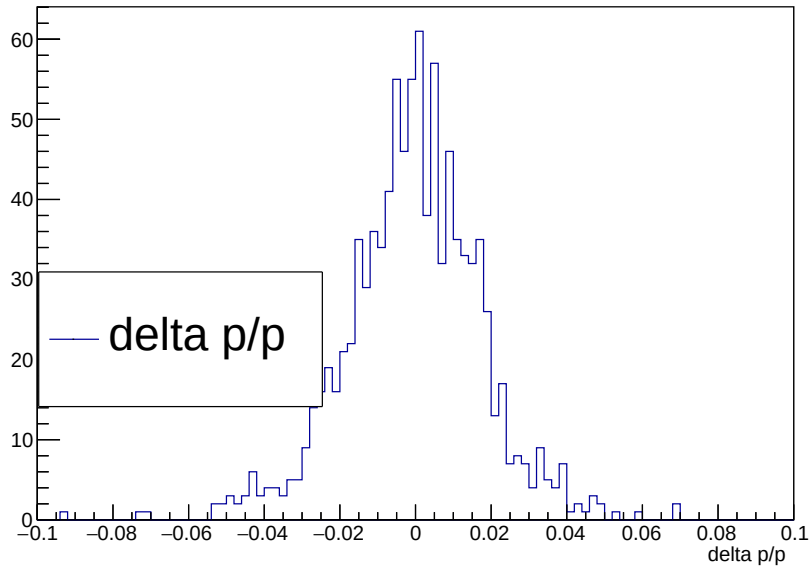


- Again 1–2 GeV/$c$
- Maximum seeds per space point middle set to 2 (minimum not yielding a poor efficiency)
- Mostly 1 seed/track, but some 3 or 4 seeds/track
- Can potentially be optimized at the cost of forward and intermediate region performance
- Observation is that this is a moving target from ACTS to ACTS version, maybe a issue with binned seeding

# Forward performance




- 1–2 GeV/$c$ and $2 < \eta < 2.5$
- With the current parameters, forward is highly efficient and 1 seed/track
- $\Delta p/p$ (ir-)resolution appear better than 2% (and centered)

# Additional status notes

- Current performance is about the best seen
- Mystifying is still the ACTS version-to-version behavior changes
- A first run with Valgrind reveal memory bugs in the `BinnedSPGroup` (binned seeding)
  - Maybe the best course is to move to the unbinned seeder? (Recommendation by ACTS developer and Joe Osborne/sPHENIX)
  - Juggler appears not to be frequently debugged this way, a few seemingly other bugs, and a flood of possible false positives (1000 events produce a log file 38 MB large).
- Dimitri Romanov volunteered to make initial port to EICrecon based off this version (to be merged)