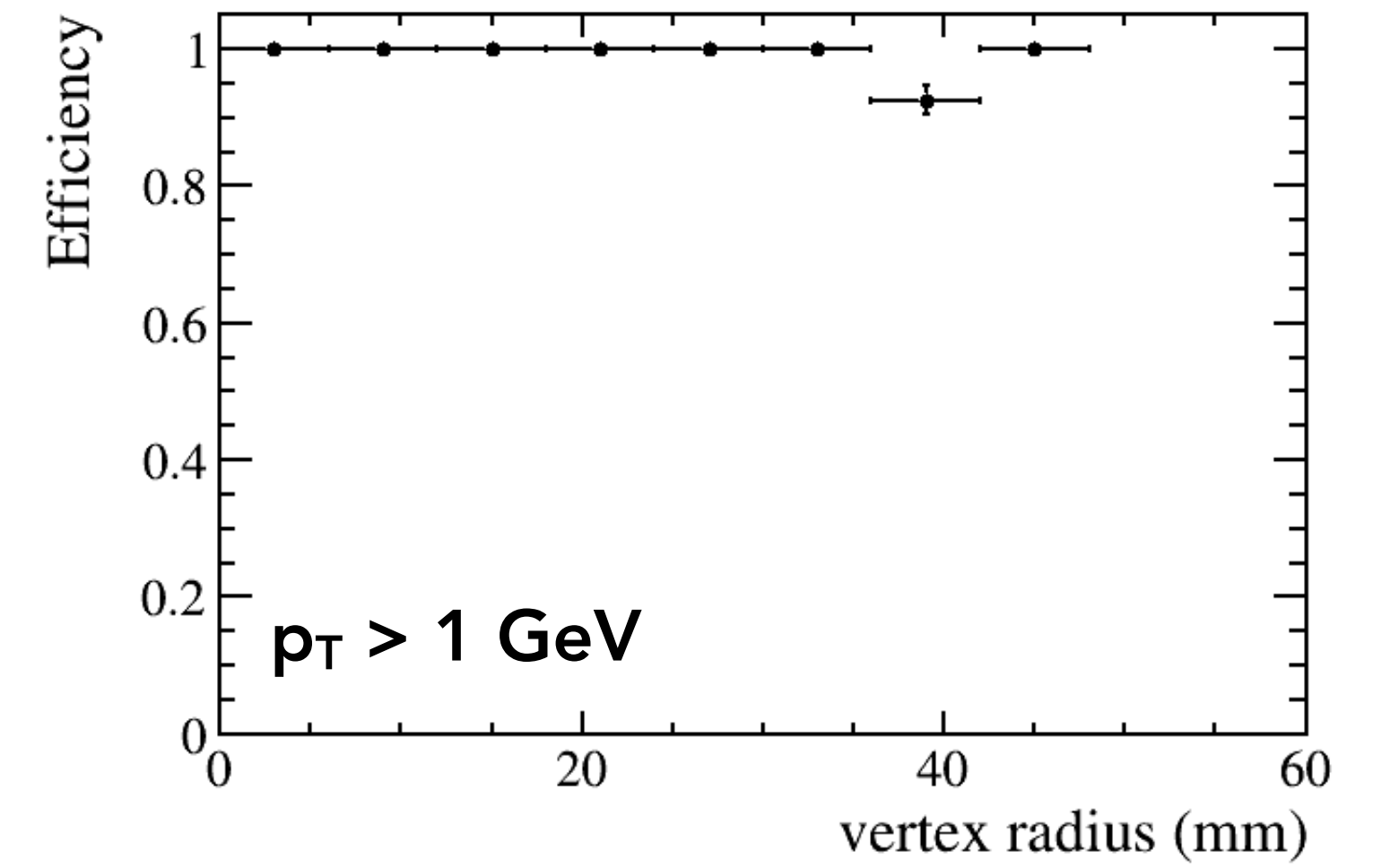
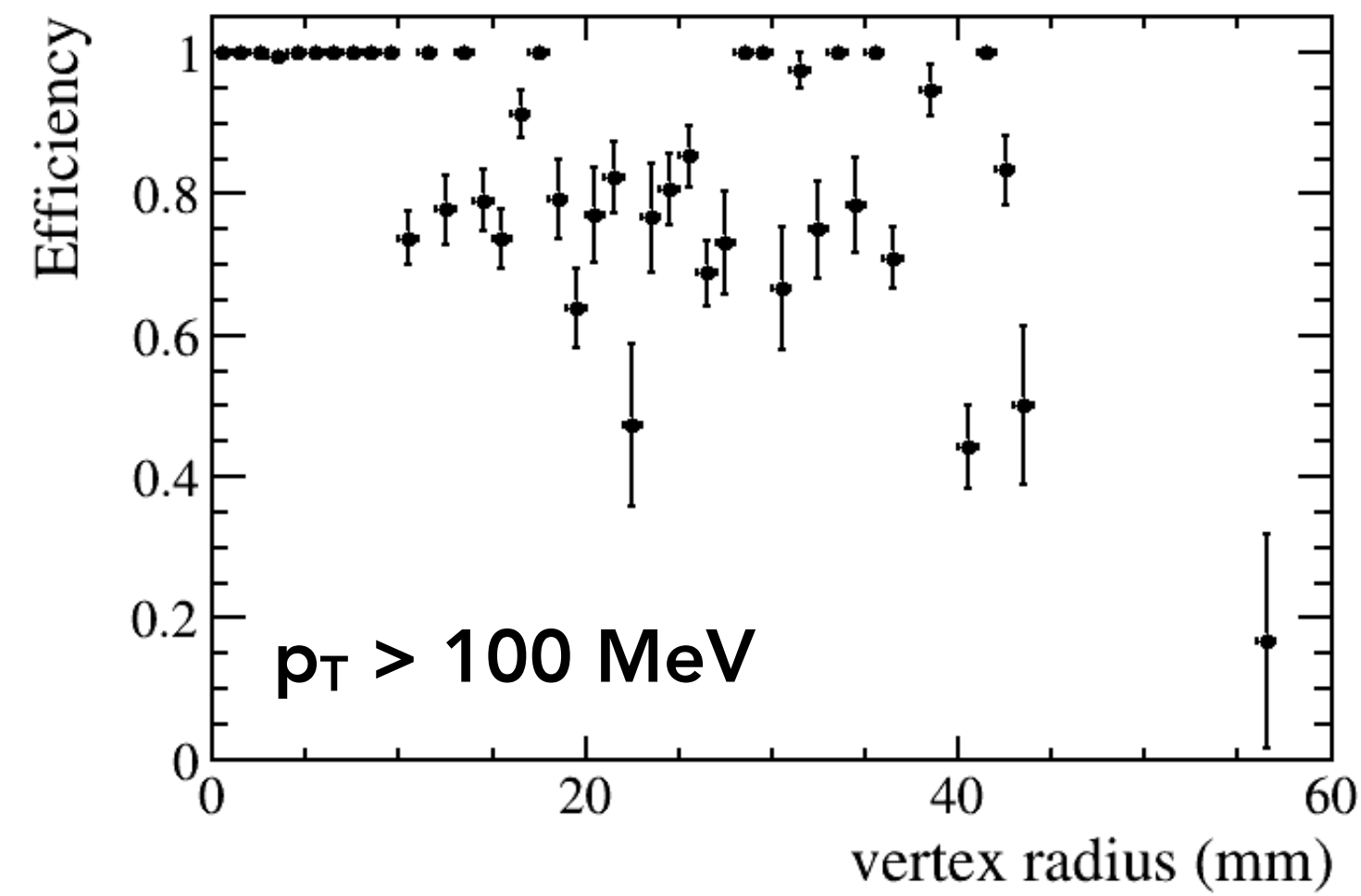
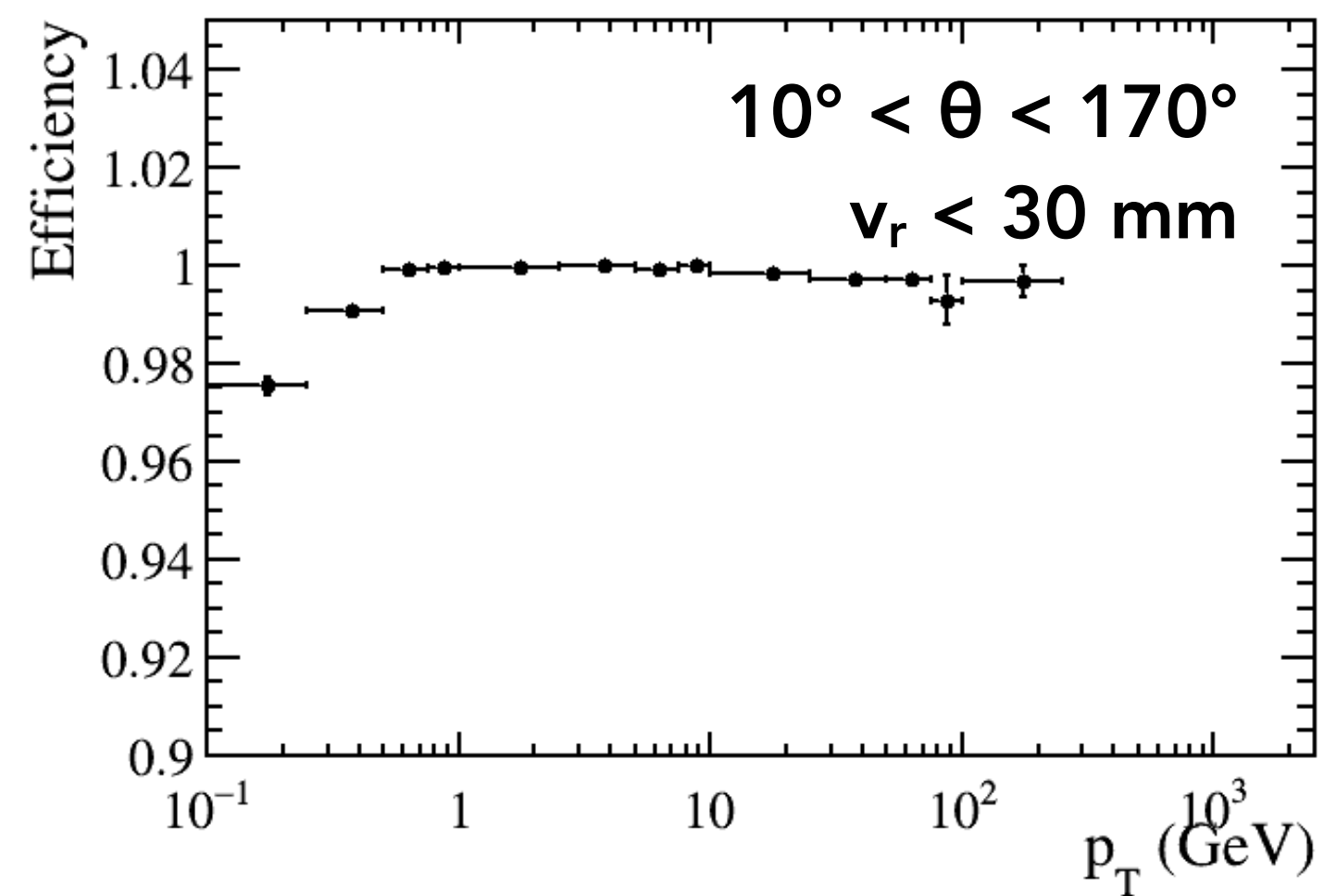


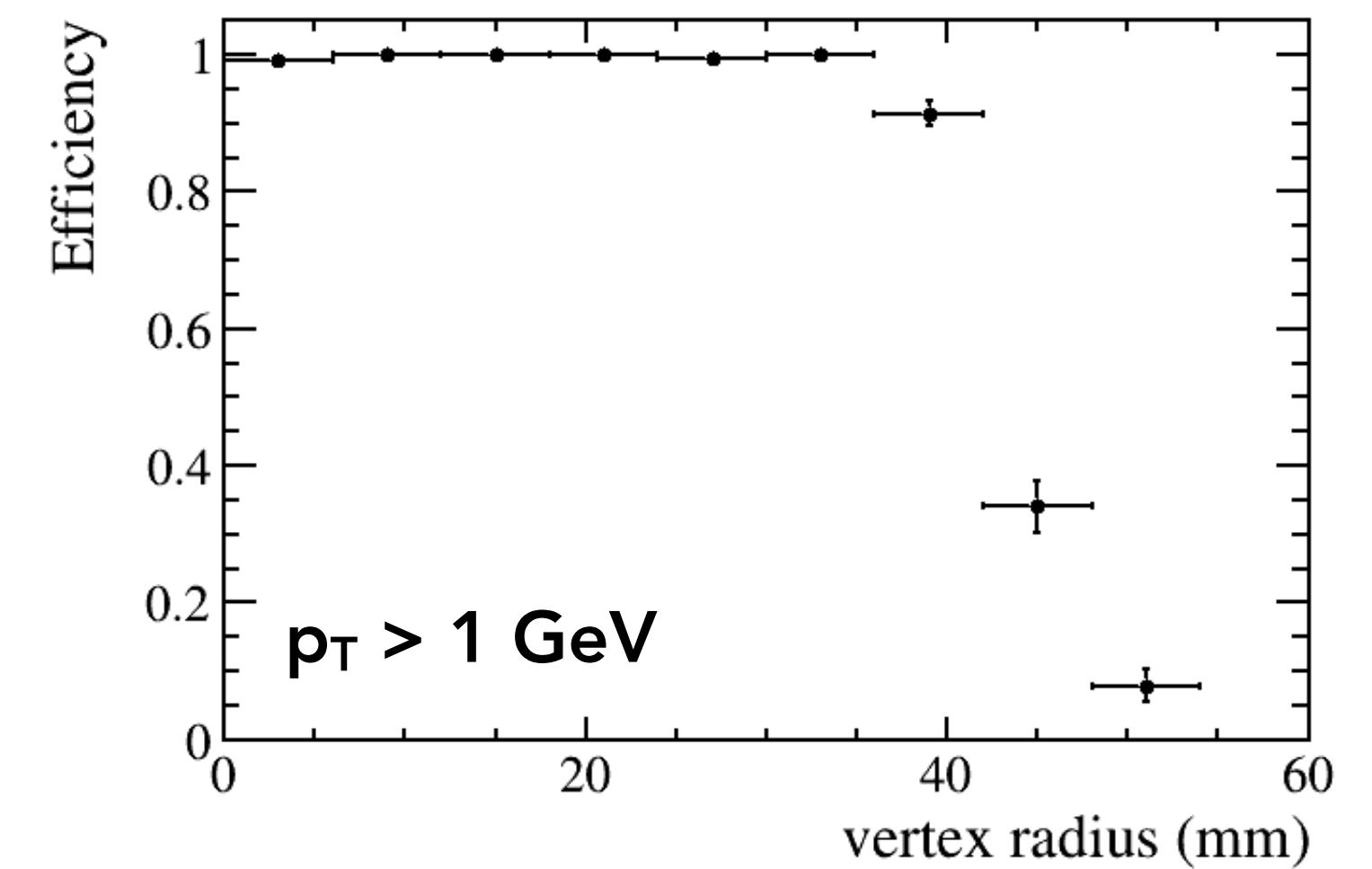
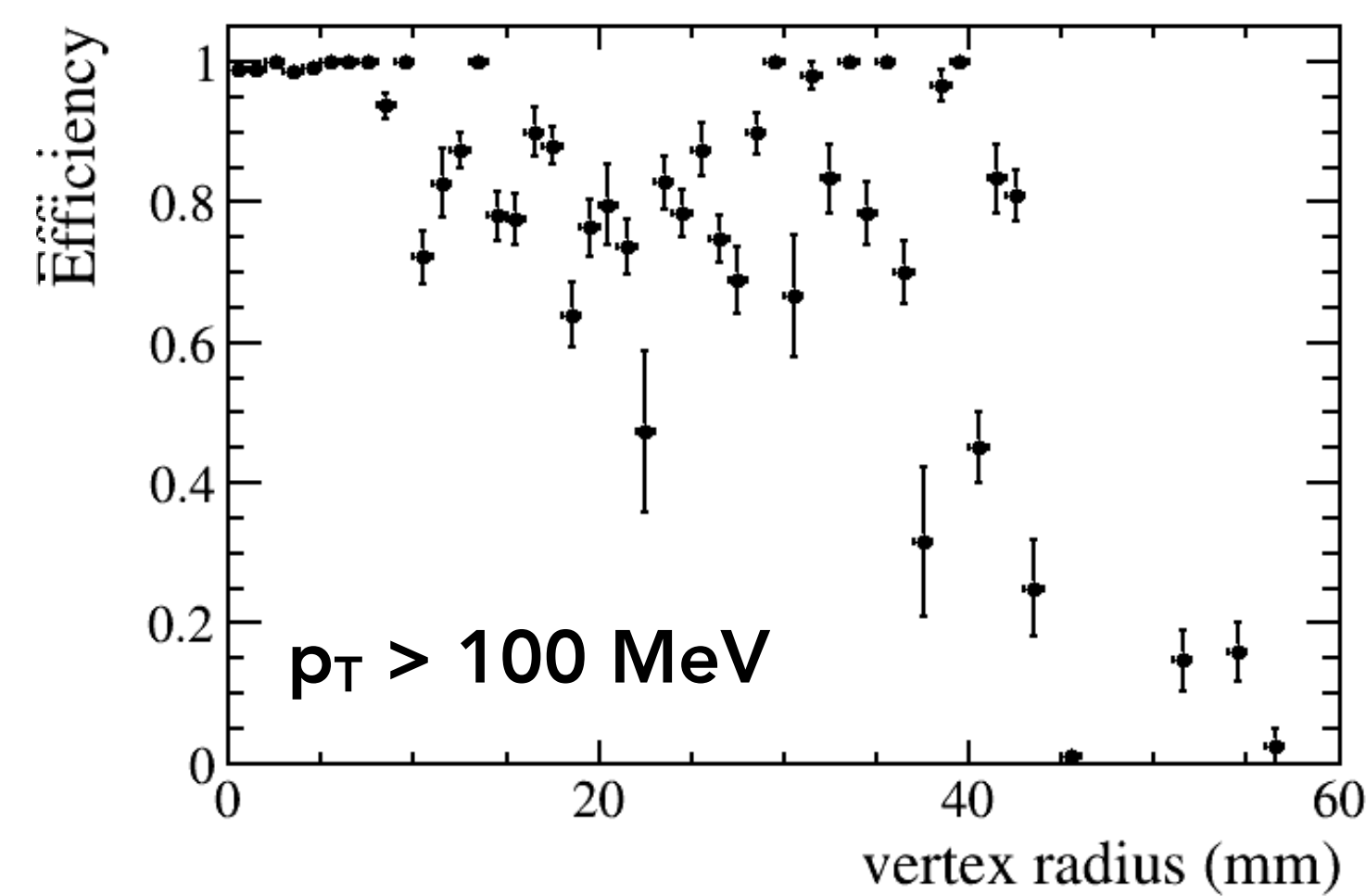
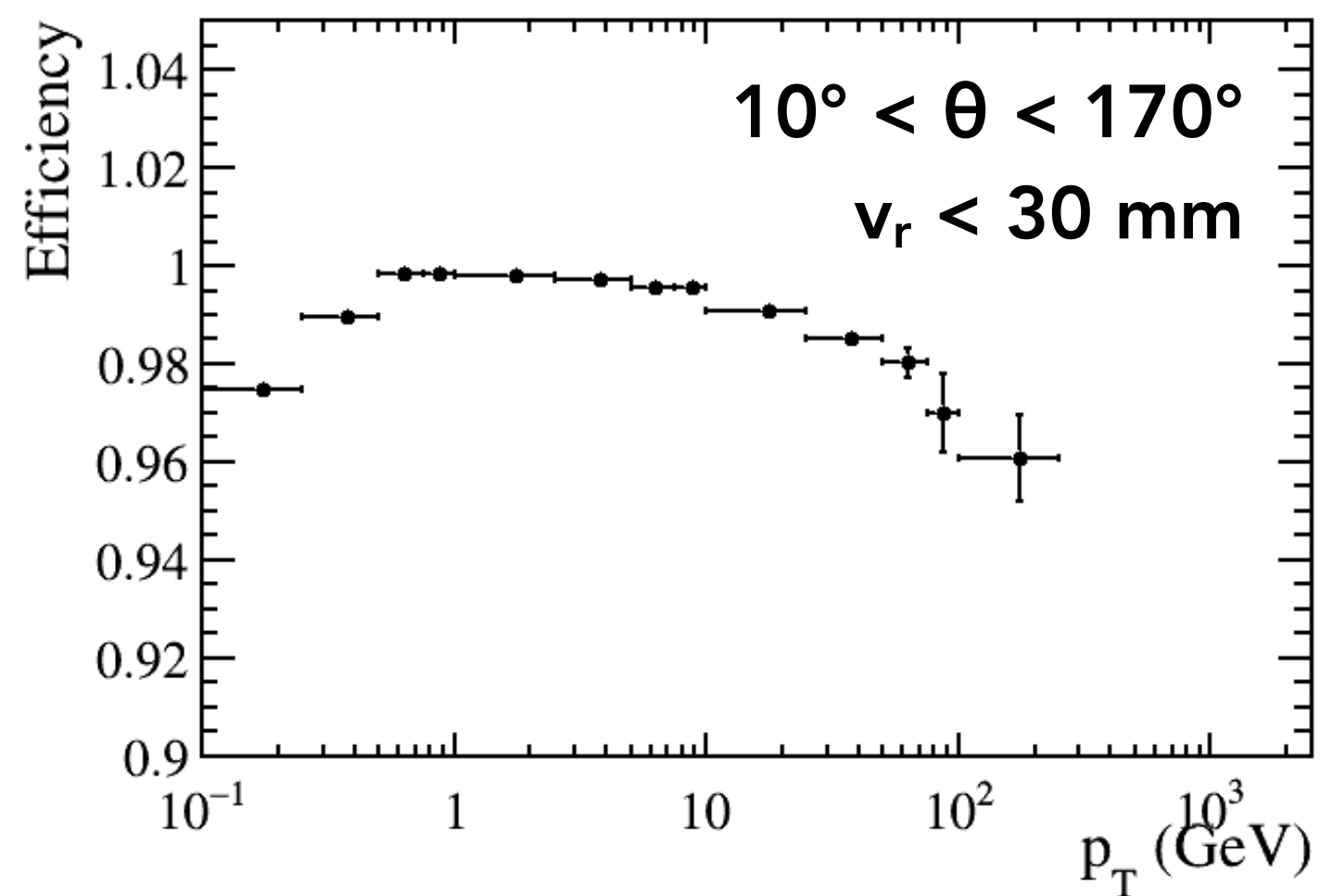
Some updates on Conformal Tracking

Daniel Hynds

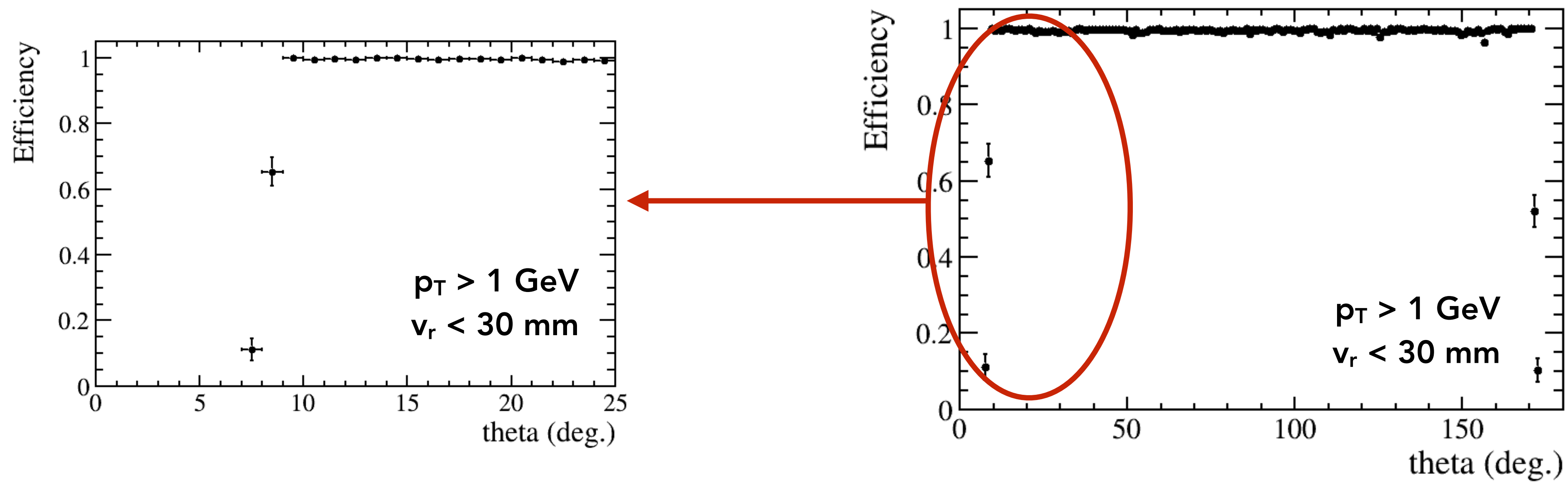
- 500 GeV $Z \Rightarrow u, d, s$
 - **Vertex detector**, conformal tracking only
- Drop at higher radius from low momentum tracks could be related to seed criteria search => should improve...



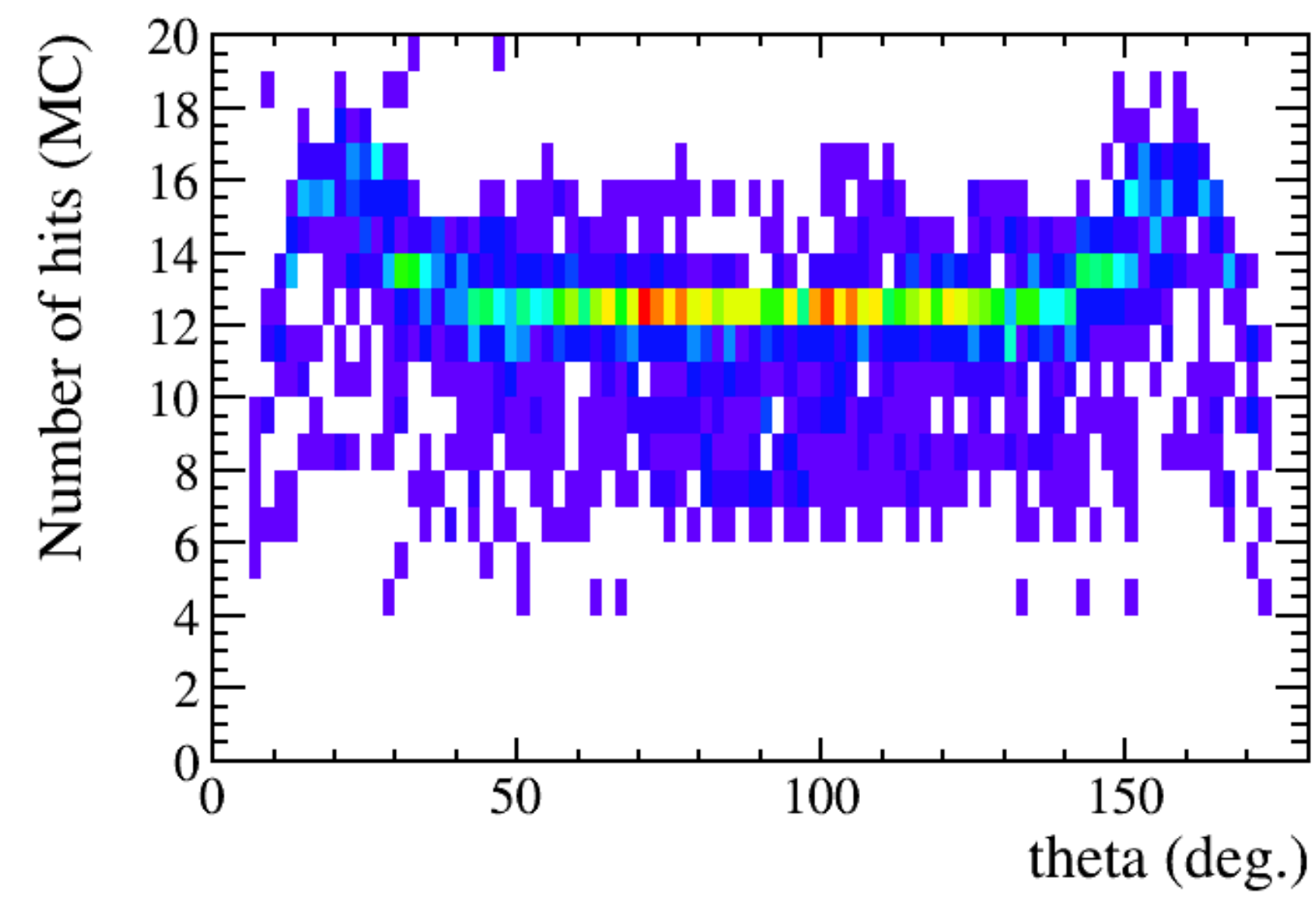
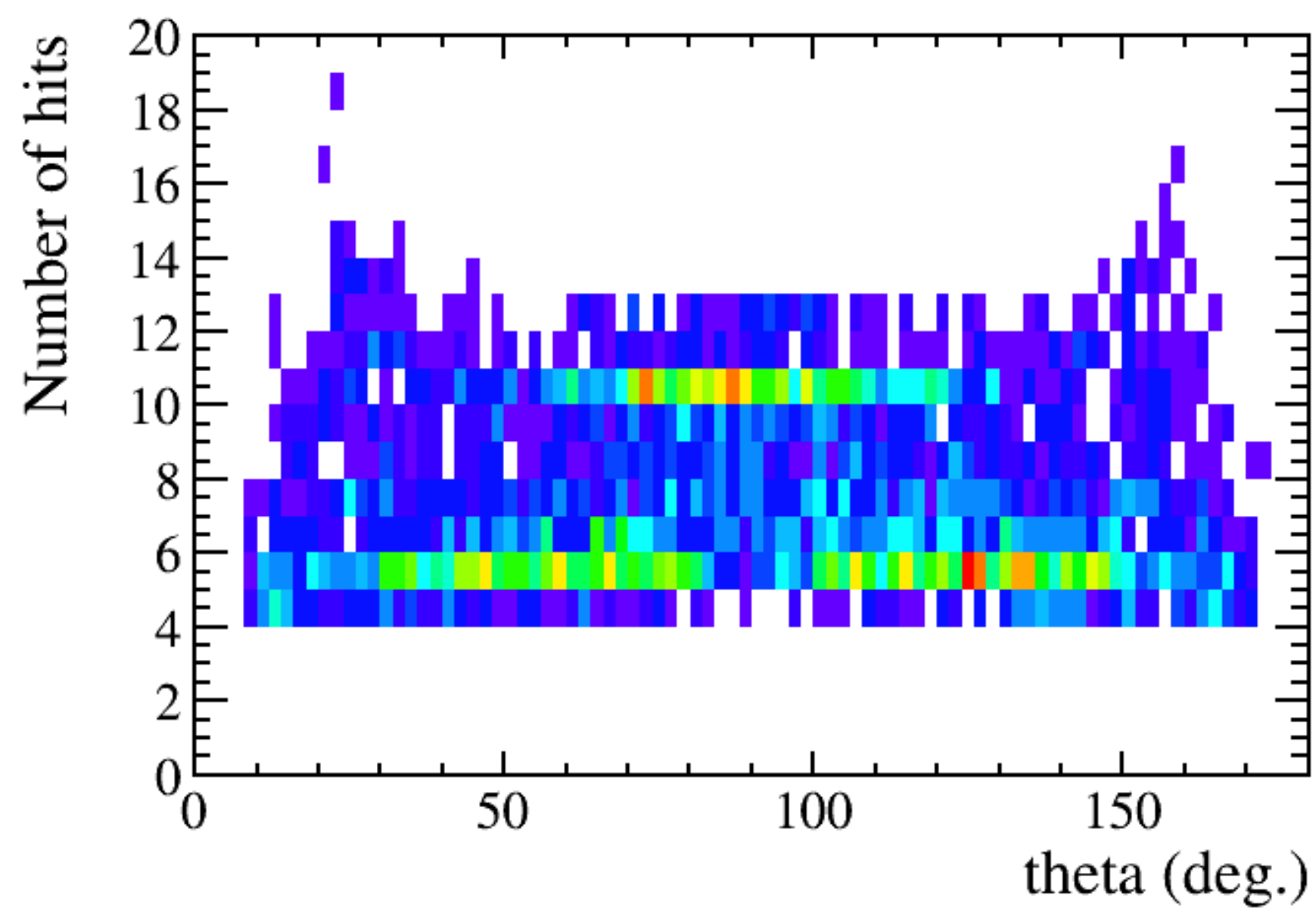
- 500 GeV $Z \rightarrow u, d, s$
 - **Full detector**, conformal tracking only
- Drop at high p_T appears related to purity cut, “unrelated” hits being added in the extrapolation
 - Have seen hits due to secondary $e^{+/-}$ being added to track (lie on trajectory) => should these be considered “bad” hits? Track parameters could still be good...



- 500 GeV $Z \rightarrow u, d, s$
 - **Full detector**, conformal tracking only
- Tracking seems to work well in forward region



- 500 GeV $Z \rightarrow u, d, s$
 - **Full detector**, conformal tracking only
- Main issue seems to be in accepting new hits with chi2 criteria - seem to lose purity and not pick up "real" hits
 - Currently looking into this



- The code is now well-commented and structured “properly”, can replace code in repository (does not extend functionality at the moment)
 - Can add several track strategies => once fixed should cover the full detector
 - Currently hard-coded, and look like:
 - **build new tracks** in the vertex barrel
 - **extrapolate** all tracks to endcap
 - **build new tracks** in the vertex barrel + endcap
 - **extrapolate** all tracks through trackers
- Biggest task just now is to make sure correct hits added during extrapolation through the tracker, followed by tackling displaced tracks
 - For some reason tracks with $p_T < 1-10$ GeV/c are very pure, tracks with $p_T > 10$ GeV/c tend to have “bad” hits
- Additional issue appears to exist in Extrapolator => Jean-Jacques highlighted that extrapolator is not picking up hits
 - Do we try to do anything about this at the moment?