

High pt hadron TR fraction from jet sample

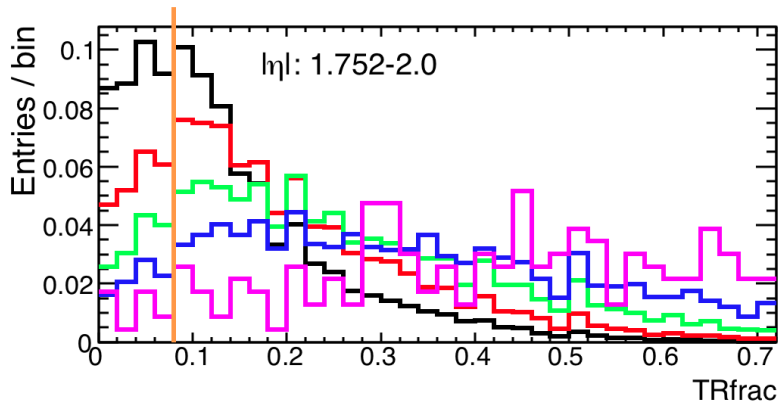
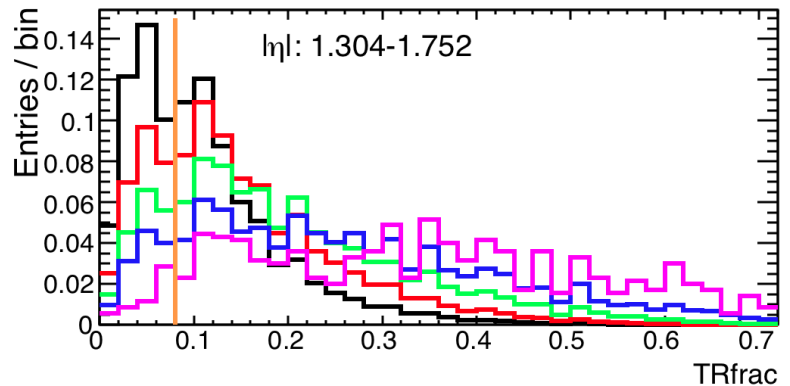
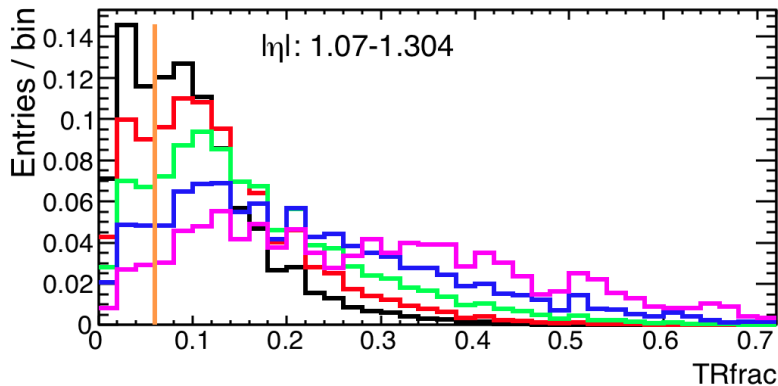
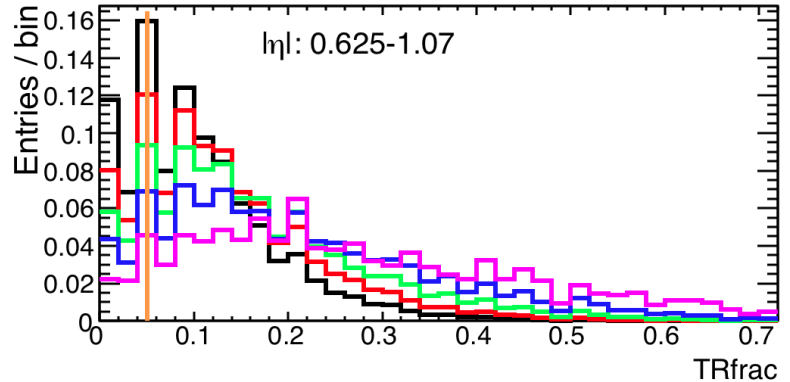
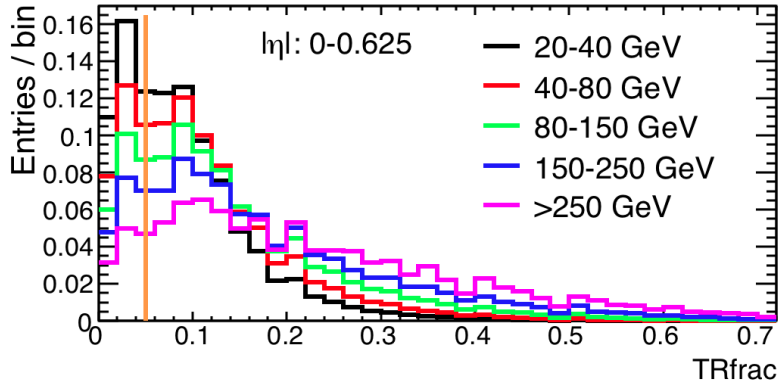
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Data sample

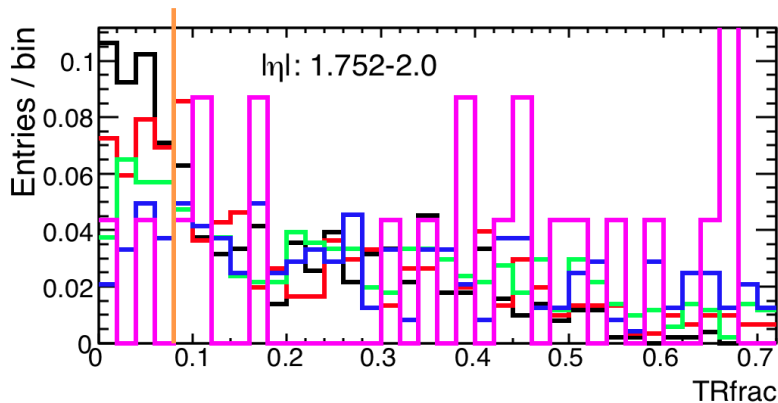
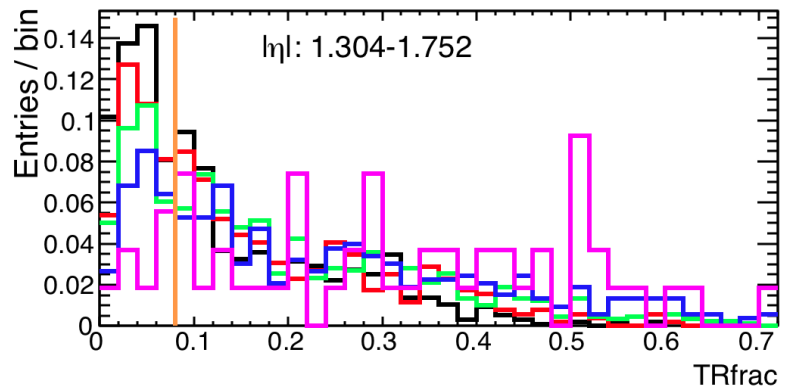
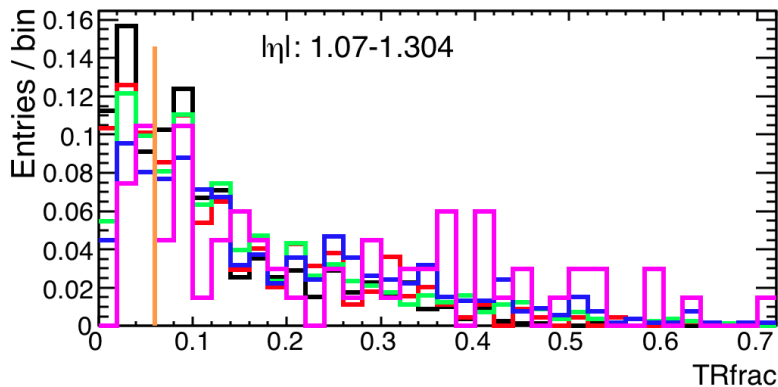
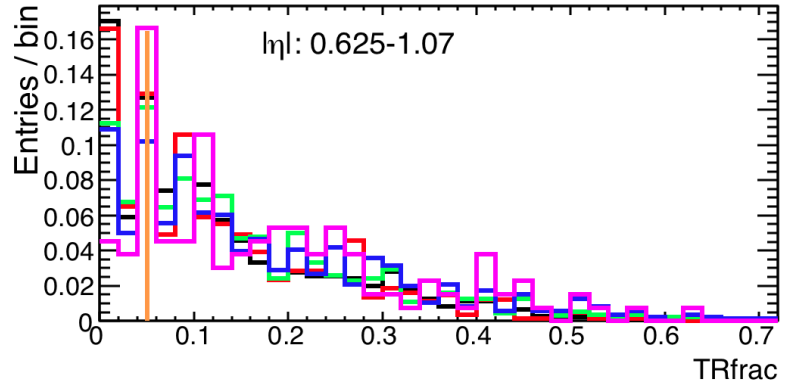
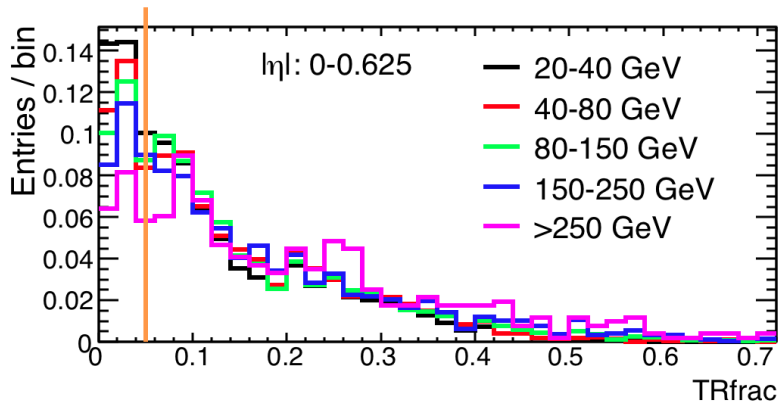
- JetTauEtmis stream of period B2, D1-D6 (run 178044-180448)
- Event selection
 - Passed inclusive jet triggers, Egamma GRL, LAr noise cut
 - At least on vertex with ntracks > 2
- Object selection
 - Container electron author 1 or 3, $|\eta| < 2.0$, crack removed, OTX cut
 - cluster $E_t > 20$ GeV,
 - Track cut in Medium (TRACKINGNOBLAYER), B Layer cut
 - $|d_0| < 1.5$ mm, $|z_0 \sin(\theta)| < 1.5$ mm
 - ~5.6 M objects selected
- TR fraction distributions
 - 5 η bins: 0, 0.625, 1.07, 1.304, 1.752, 2.0 (as in isEM)
 - 5 E_t bins: 20, 40, 80, 150, 250, ∞
 - Plots for container, loose and medium electron objects
 - Indicated on the plots the loose TRT cuts proposed in the 5 η bins: 0.05, 0.05, 0.06, 0.08, 0.08

Trfrac of Container electrons



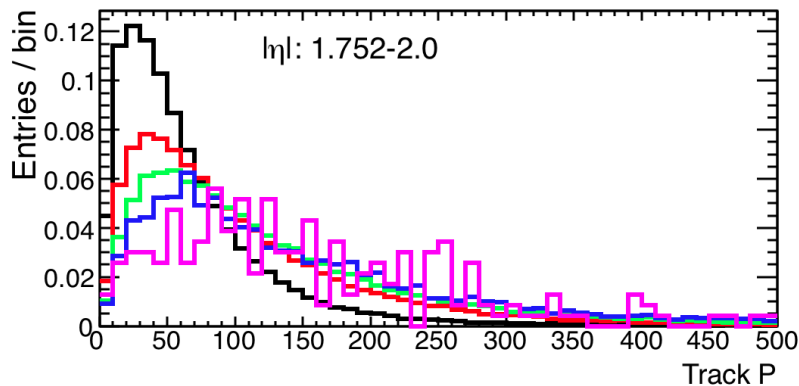
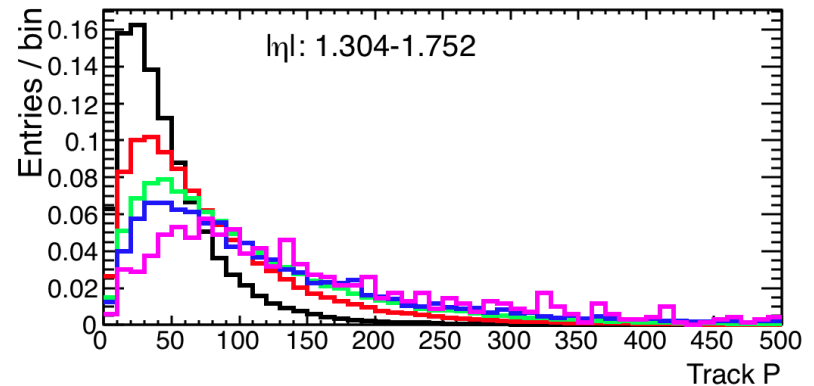
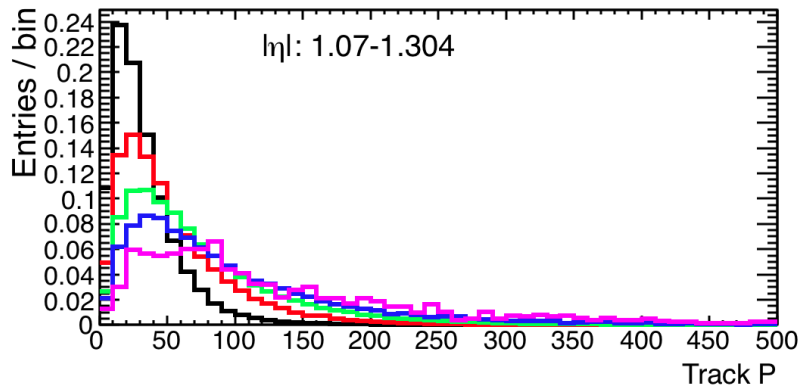
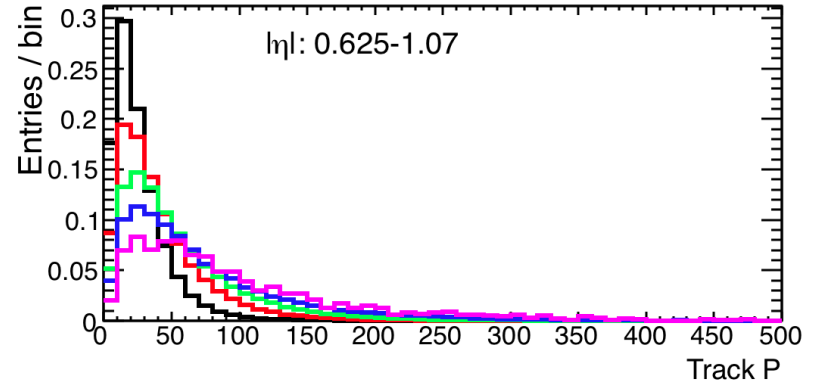
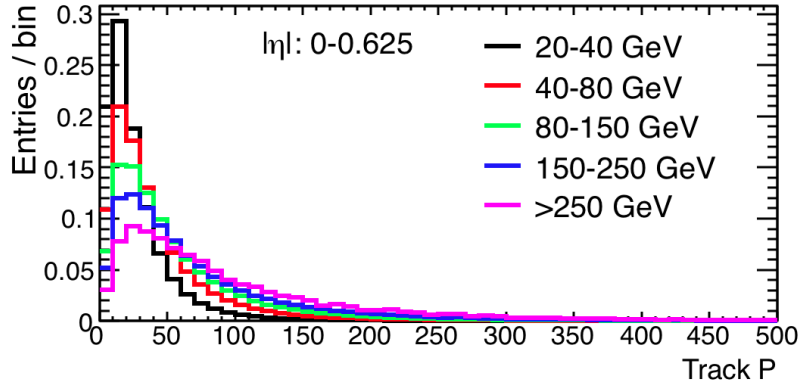
- loose TRT has small rejection at high Pt, in particular at high eta
 - Maximum ~10% for $E_t > 250$ GeV

Trfrac of Loose electrons

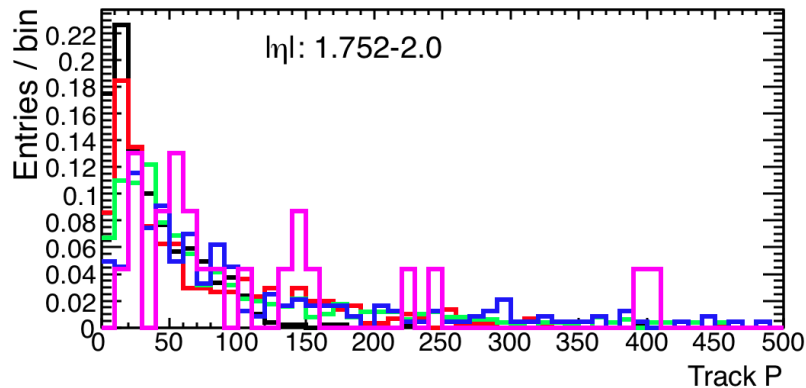
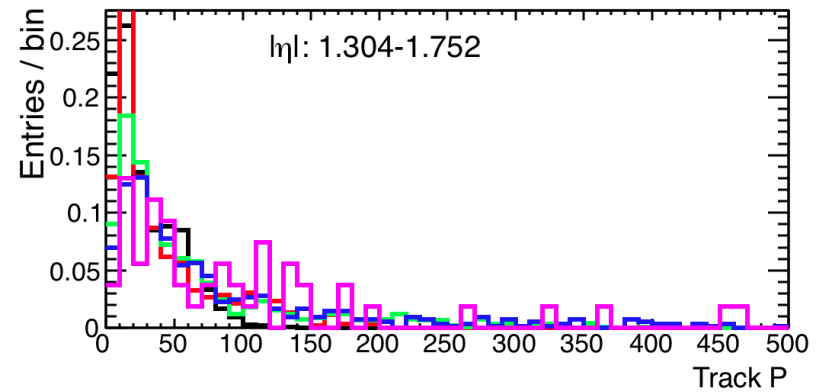
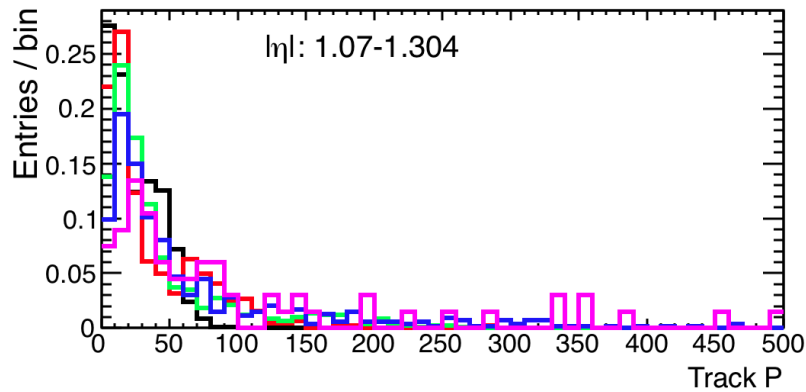
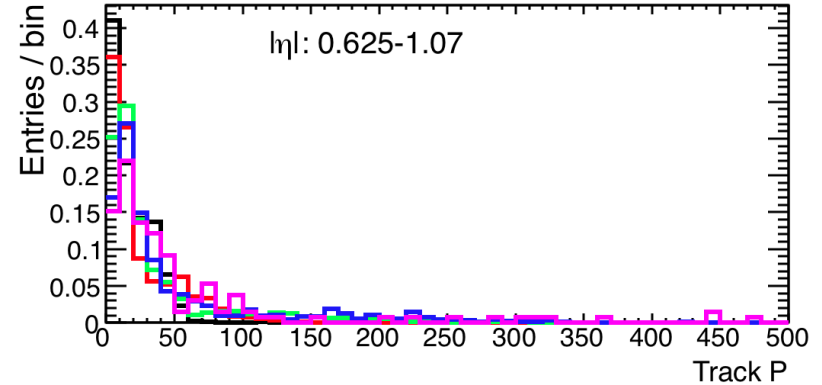
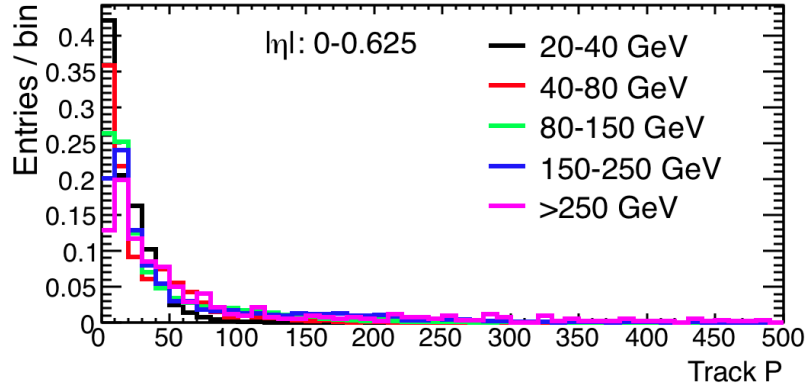


- Lower statistics but similar trend
- But distributions are shifted to the left (more hadron-like), compared to the container electrons!
 - Track momentum distributions changed!

Track P of Container electrons

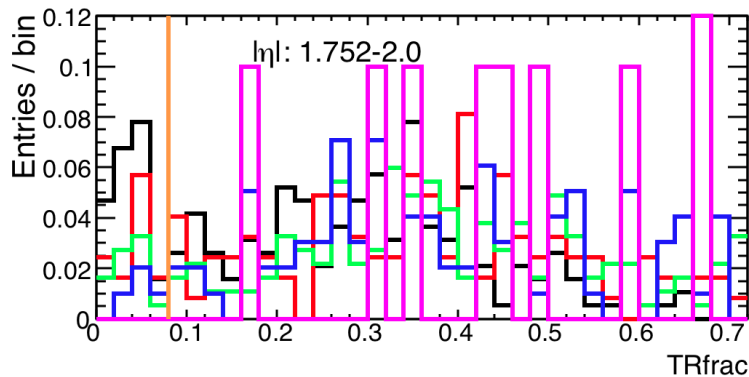
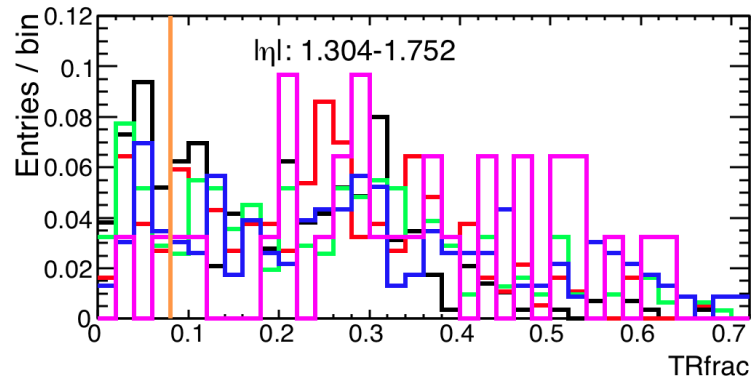
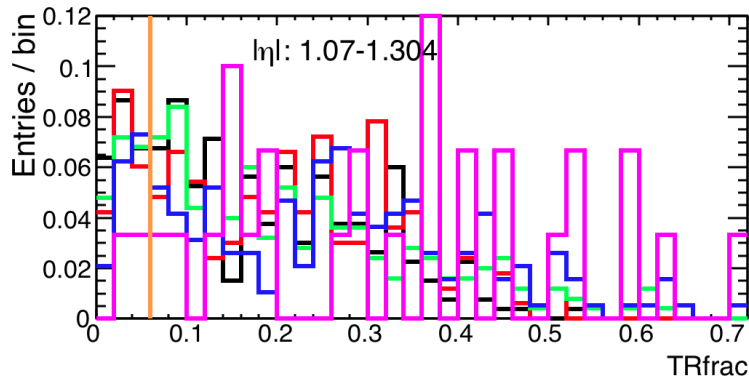
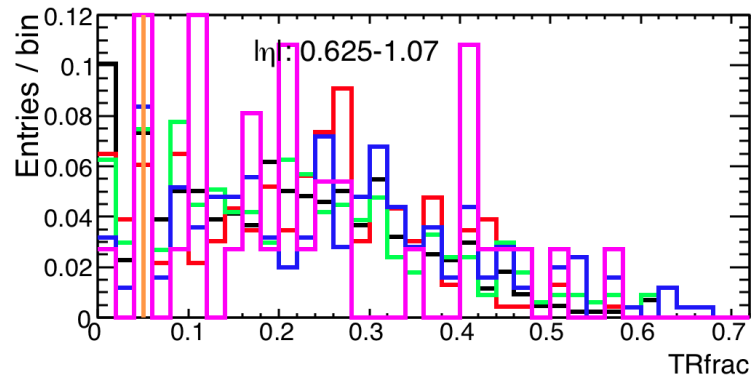
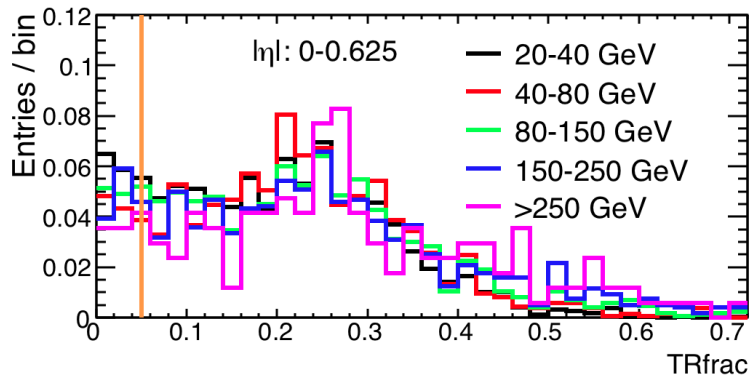


Track P of Loose electrons



- Loose cut reject more hadrons with high momentum in all eta and et bins
 - Probably because higher P has larger hadronic leakage.

Trfrac of Medium electrons



- The trend is reversed: distributions are shifted to the right (more electron-like)
 - loose TRT rejection is even more marginal
- Note real electrons not removed 7

Conclusions

- LooseTRT will not have large rejection for hadrons for very high E_t (> 200 GeV) electrons, in particular at high η
 - Rejection is at or less than 10% level based at Loose selection
 - Rejection is at or less than 5% level based at Medium selection
 - Real electron contamination not removed, but expected to be small because events are predominated triggered by high p_t jets (j135 and above).