

Weekly Report

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Dihiggs multi lepton

- yy+lepton sample request
 - with Huirun
 - 4+1 signal;
 - 2 categories: 1l; 2+l;
 - 1M each; Could be 10M in total.
 - HH->WW/ZZ/ $\tau\tau$ only; +lepton filter
 - Madgraph+Herwig7(showing), NLO, AtlasProduction-19.2.5.34
- Report on Wednesday;

- EMBremCollectionBuilder + EMExtrapolationTools
 - GSF in full eta region
 - still unmatched for $\eta > 3.2$;
- In new Athena release central region electron is lost
 - go back to r21.9.0
 - step 3.0 and 2.2;
 - already reported;
- Ask how to finish
 - A merge request
 - Documentation

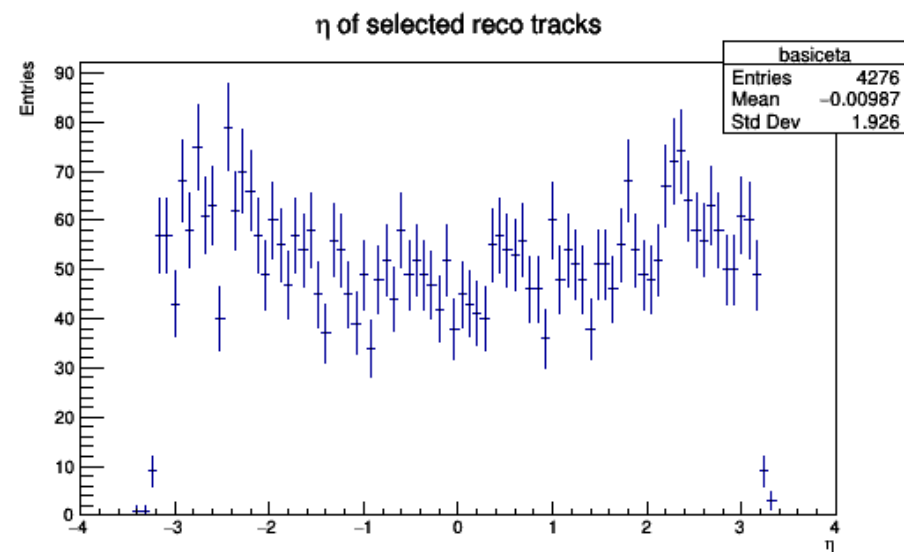
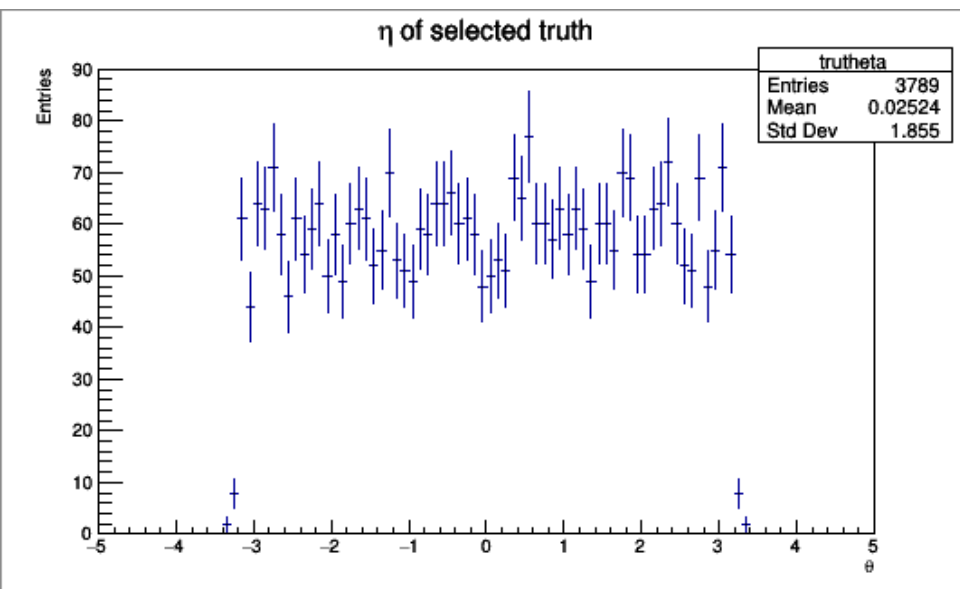
InDetTrackParticles

now about 5% electrons would be brem fitted in ITK part.

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Number of events processed .....: 5000
statistics by eta range .....: All---Barrel---Trans.-- Endcap-- Forwrd--
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Number of candidates at input .....: 10560 1066 1258 3471 4764
- candidates rejected score 0 .....: 229 0 5 196 27
- candidates rejected as double .....: 0 0 0 0 0
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candidates with good score .....: 10641 1021 1083 3303 5234
+ recovered after brem refit .....: 37 1 5 28 3
candidates rejected score 0 .....: 364 0 6 134 224
+ rejected failed brem refit .....: 6 0 0 4 2
+ rejected brem refit score 0 .....: 916 14 68 642 192
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number of normal fits .....: 8766 995 1068 2794 3909
+ 2nd brem fit for failed fit .....: 44 1 6 36 1
normal brem fits for electrons .....: 363 28 56 253 26
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sum of succesful fits .....: 10059 1037 1194 3698 4130
sum of failed fits .....: 29 0 4 23 2
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Number of subtracks created .....: 2858 14 41 1083 1720
Number of candidates excluded .....: 3147 67 197 819 2064
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Number of tracks accepted .....: 5875 984 979 1657 2255
including number of brem fits .....: 252 24 52 165 11
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definition: ( 0.0 < Barrel < 0.80 < Transition < 1.60 < Endcap < 2.50 < Forward < 4.00 )
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```

GSF tracks

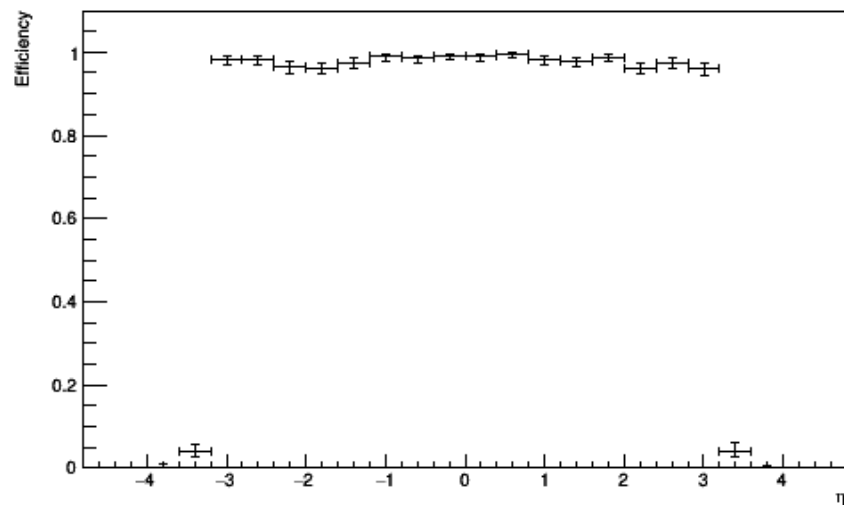
The drop at $\eta=3.2$ is due to the egamma match function. Still tuning.



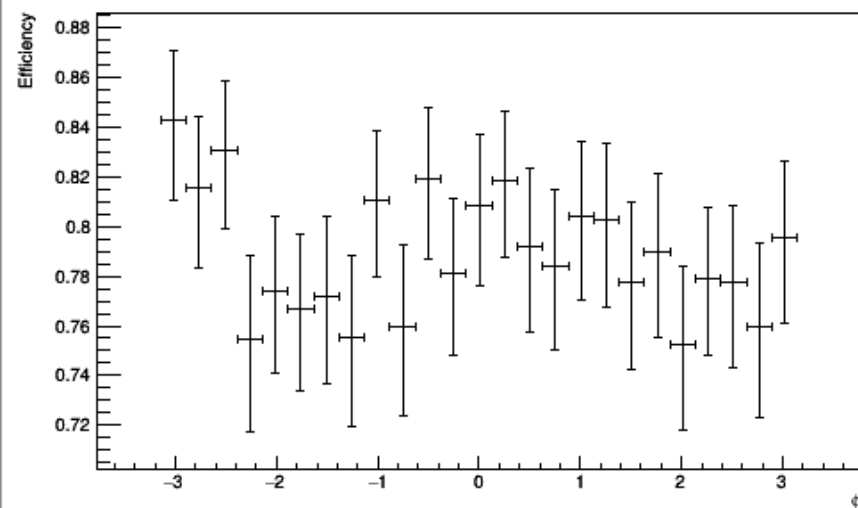
In reconstruction more than 1 tracks are reconstructed in forward region.

GSF tracks

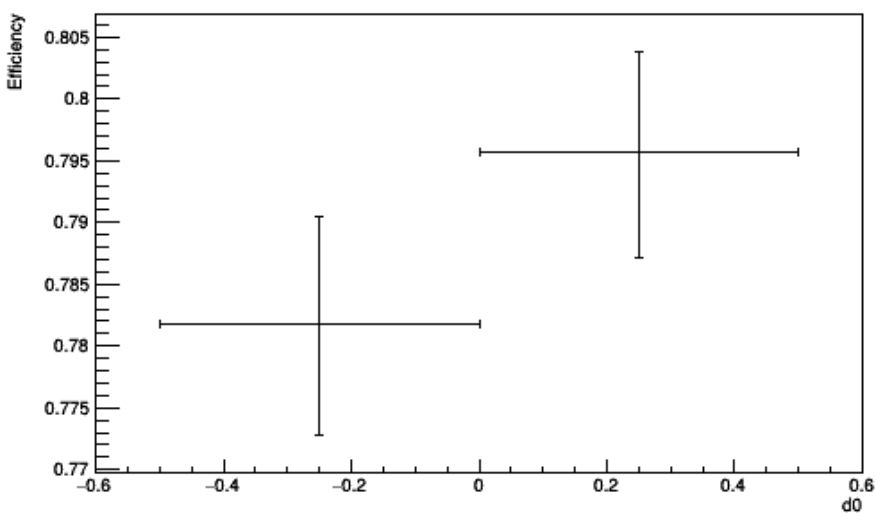
Fraction of reco-matched truth track



Fraction of reco-matched truth track



Fraction of reco-matched truth track



Fraction of reco-matched truth track

