Seeding: Some plots

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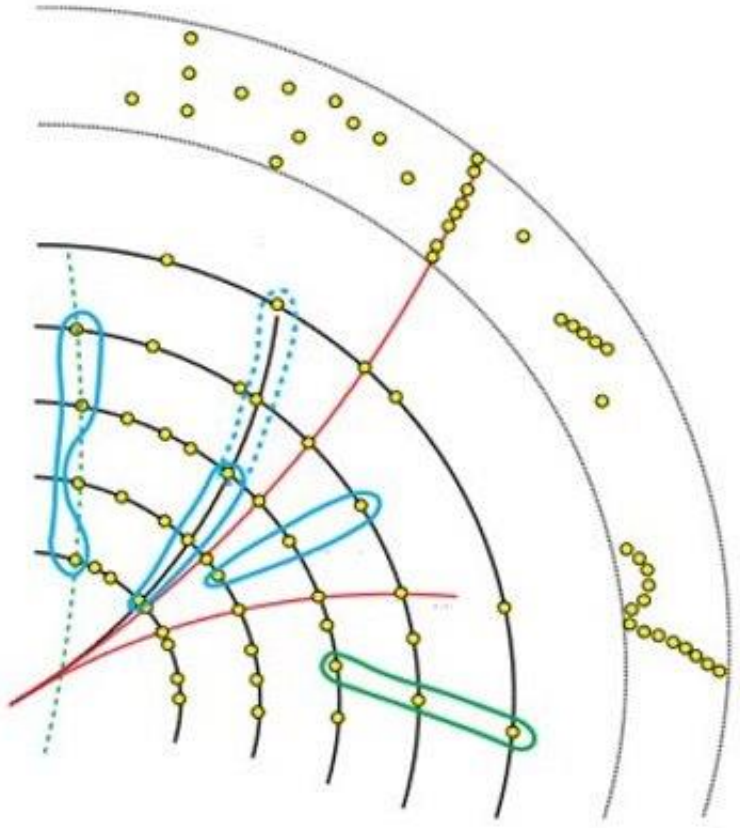
Introduction

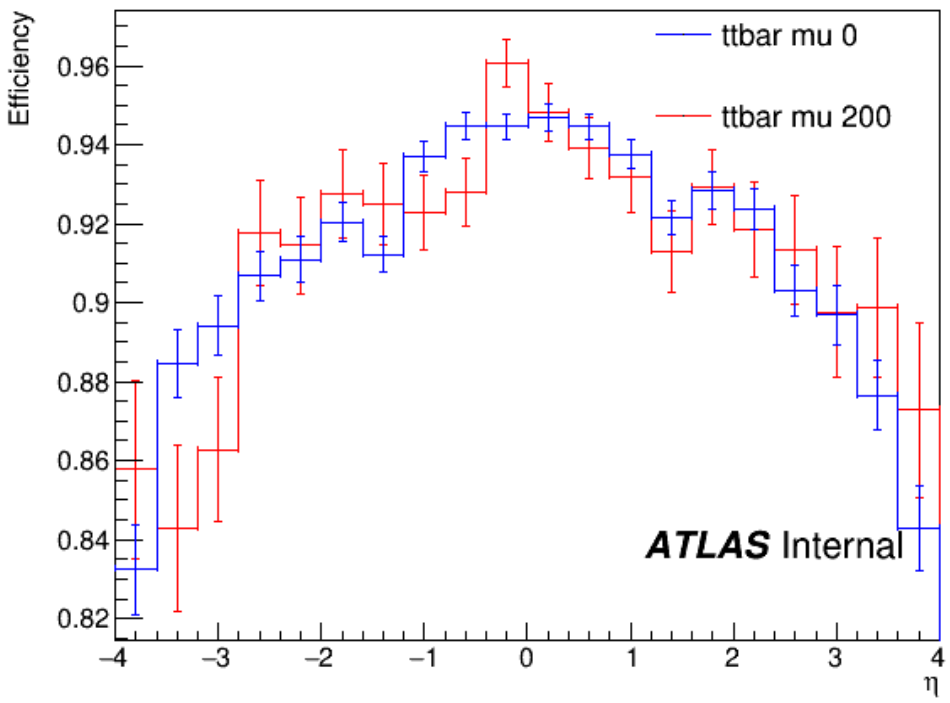
- For this example we are using ttbar (1000 events)
  - mu 0:
    - mc21_14TeV.601229.PhPy8EG_A14_ttbar_hdamp258p75_SingleLep.recon.RDO.e8481_s4038_r14362
  - mu200:
    - mc21_14TeV.601229.PhPy8EG_A14_ttbar_hdamp258p75_SingleLep.recon.RDO.e8481_s4038_r14365
  - Plots presented today from SiSPSeedSegmentsTrackParticles collection:
    - Ntuple creation (InDetPhysValMonitoring)

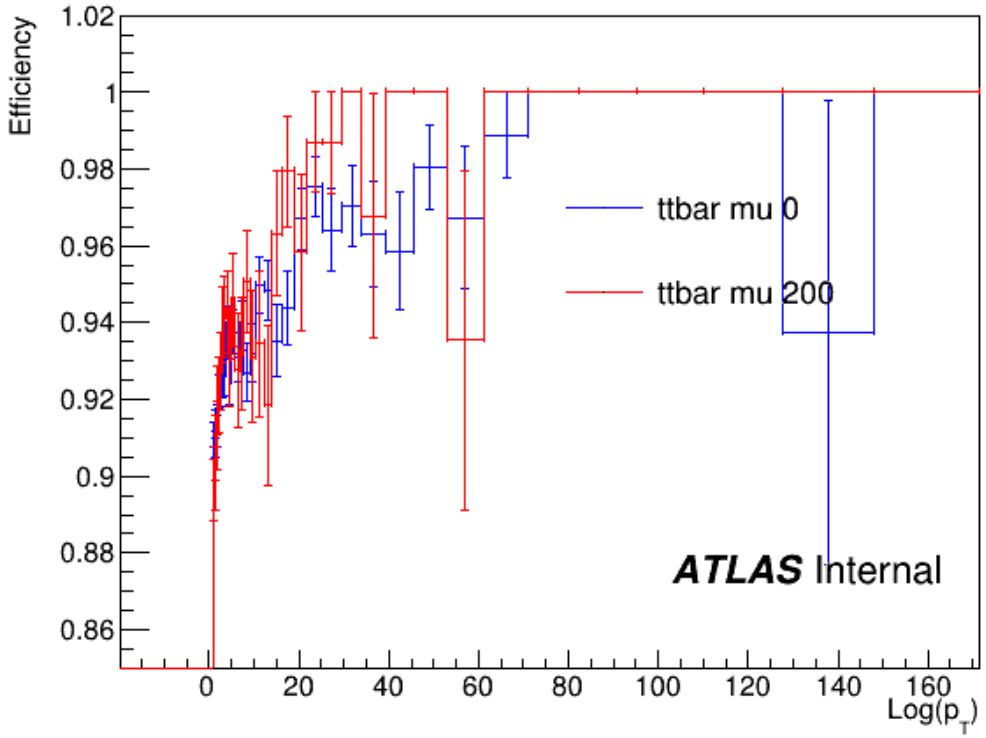
Caveat

- The seed track collection basically uses the three space-points to estimate a trajectory and then attempts to add the detector measurements that are used to form the 3D space points forming the seeds to the trajectory to build a track candidate. But it **may drop** some of them, **if they are not compatible with the trajectory model**, and the trajectory estimate itself is also not really a part of the seed.
  - So seed eta/pt/phi are not the pt/eta/phi the seed reports in the real reconstruction

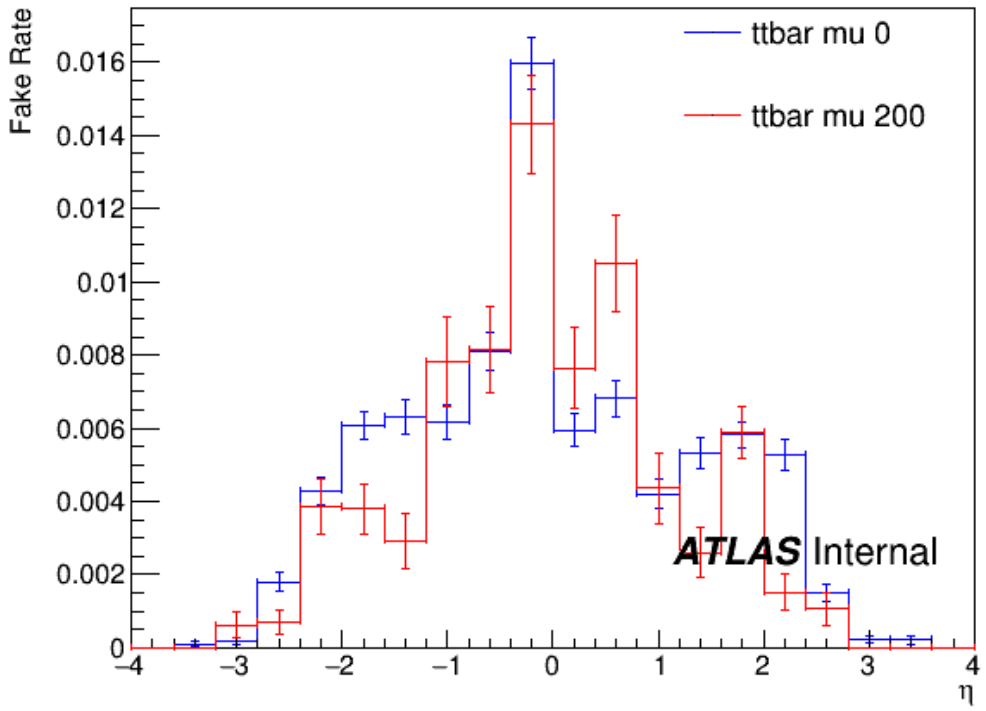


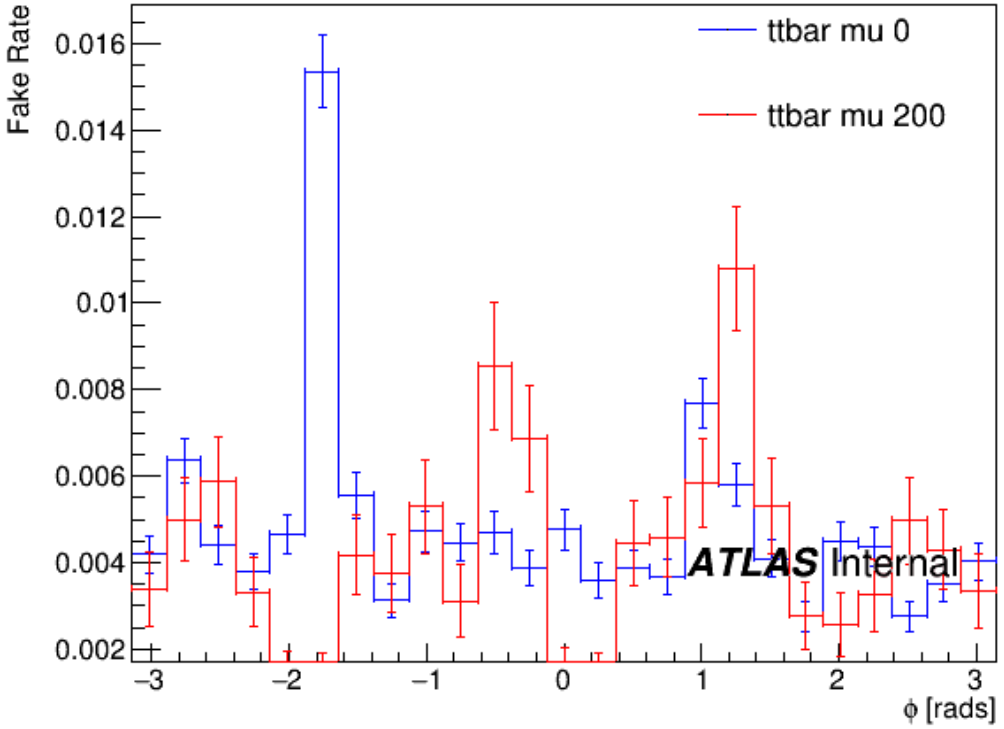
Seeding efficiency plots



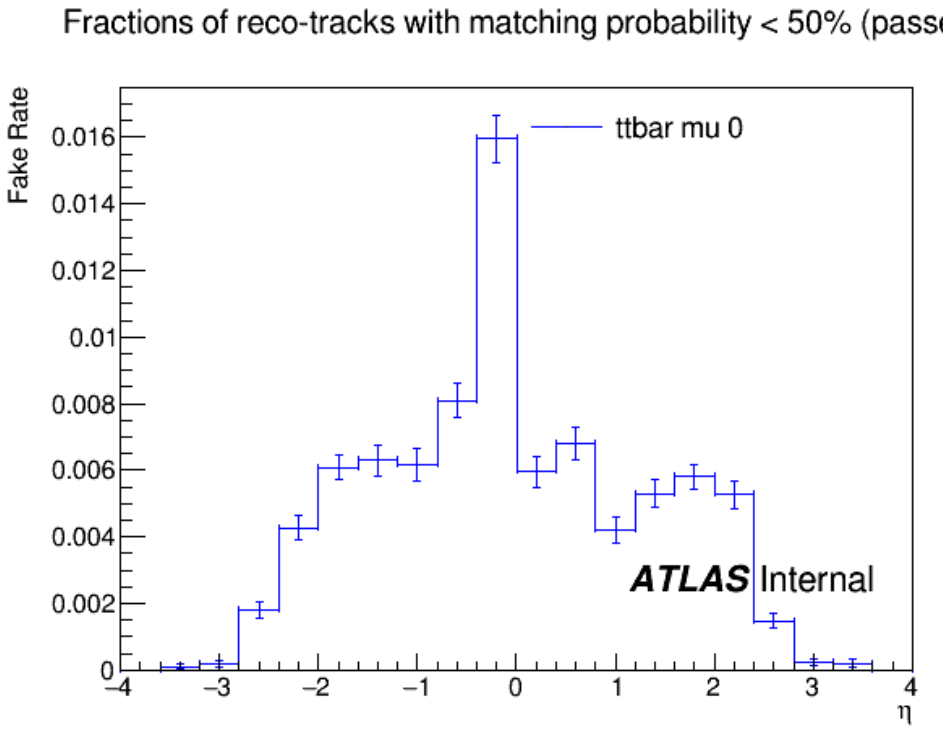


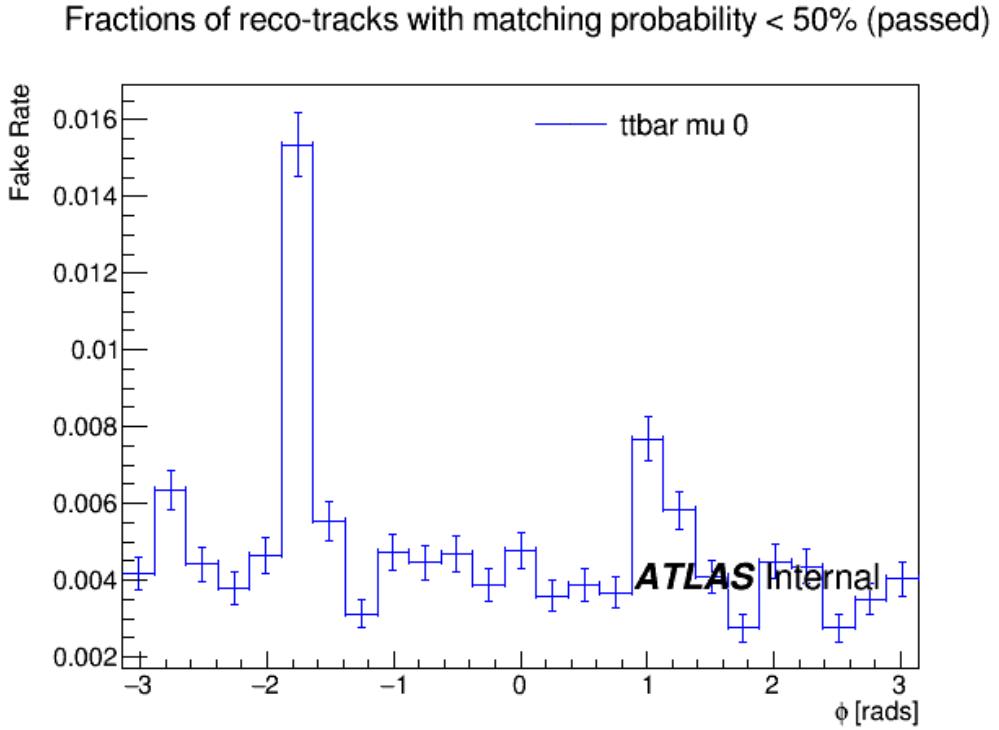
Seeding Fake rate plots





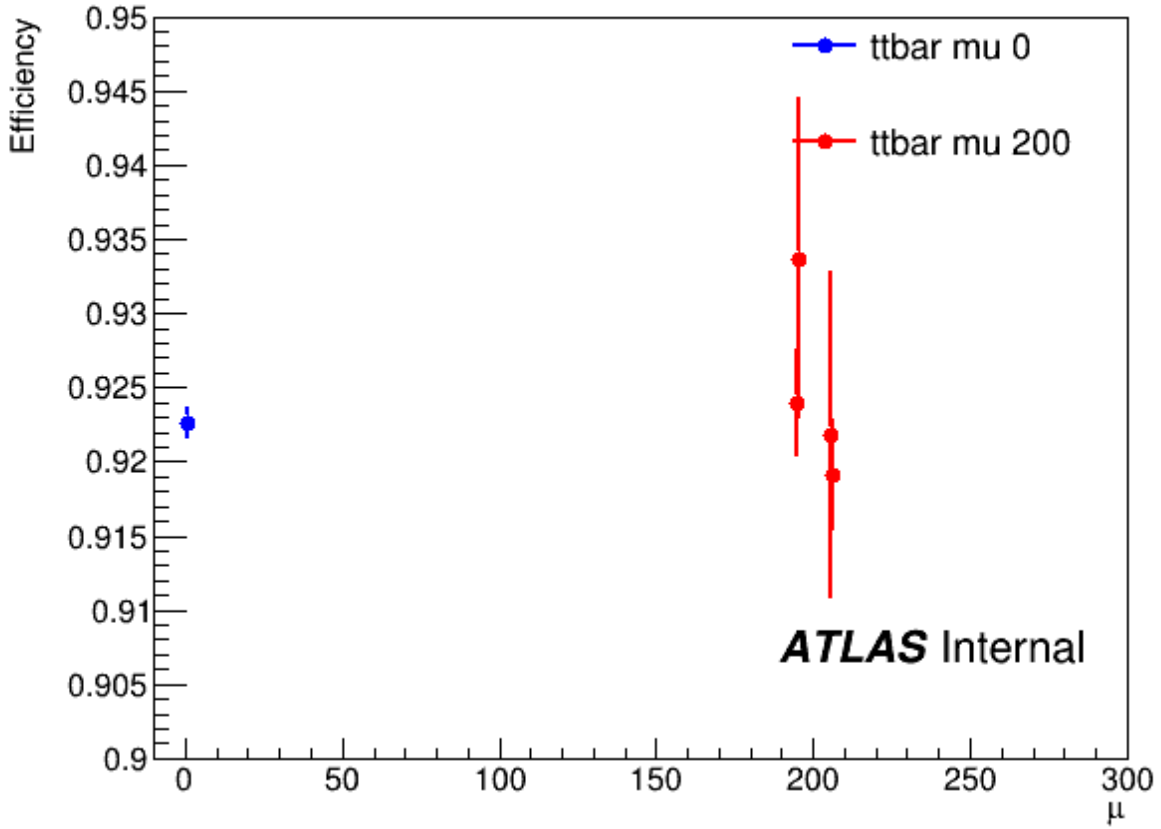
Seeding Fake rate plots





Excess of fakes around eta –0.2, those events are located around phi -1.7. Most likely to be noise.
Suppressing statistical noise is unfortunately not possible due to the nature of poisson statistics

Efficiency vs mu



Summary

- Probably I will present next week in the UP meeting to discuss which kind of studies we can do. They are interested to add these studies in the itk performance paper (currently working on this)
- QG tag. Now I can call the tool successfully from my analysis algorithm. Ready to do some studies!