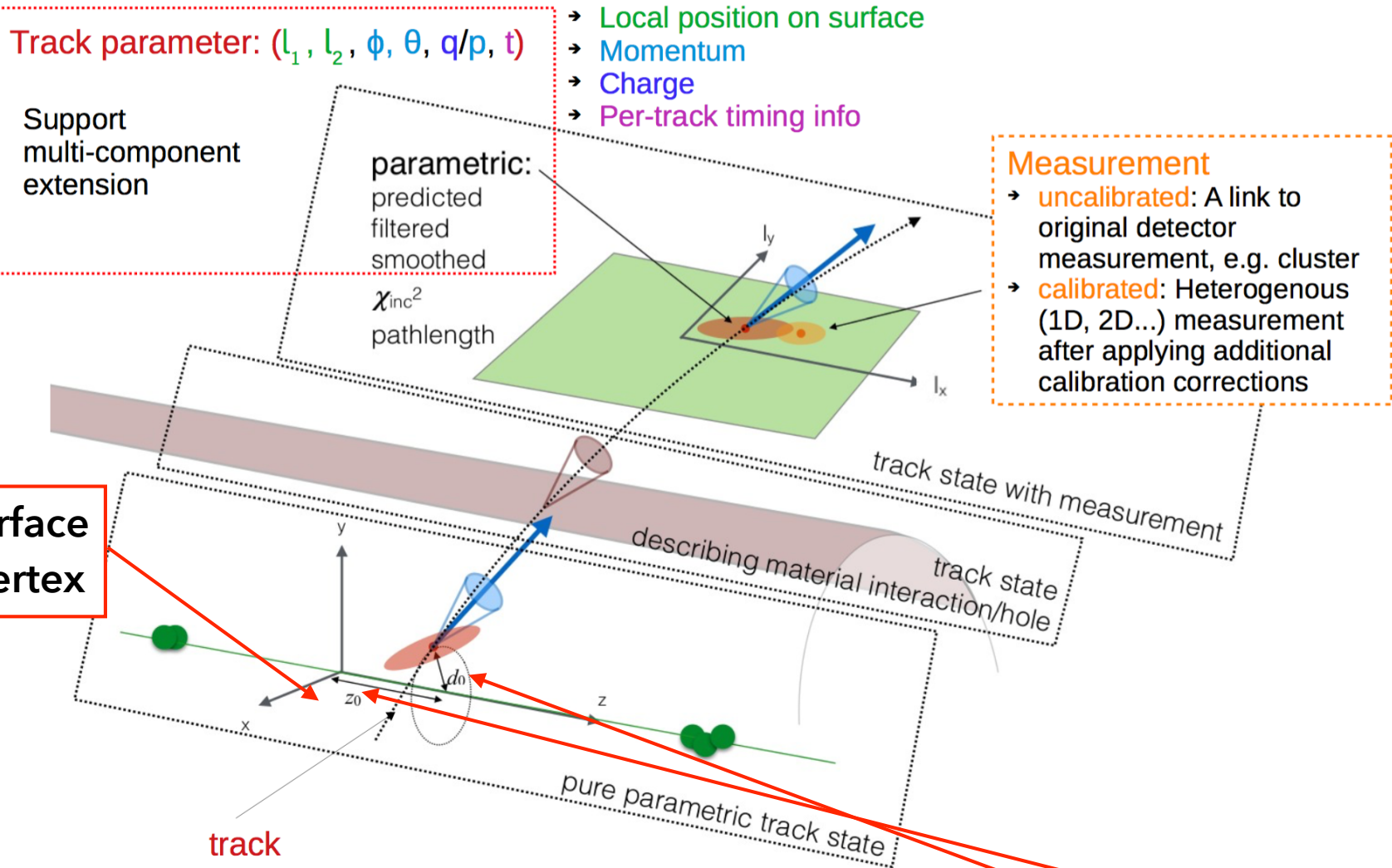


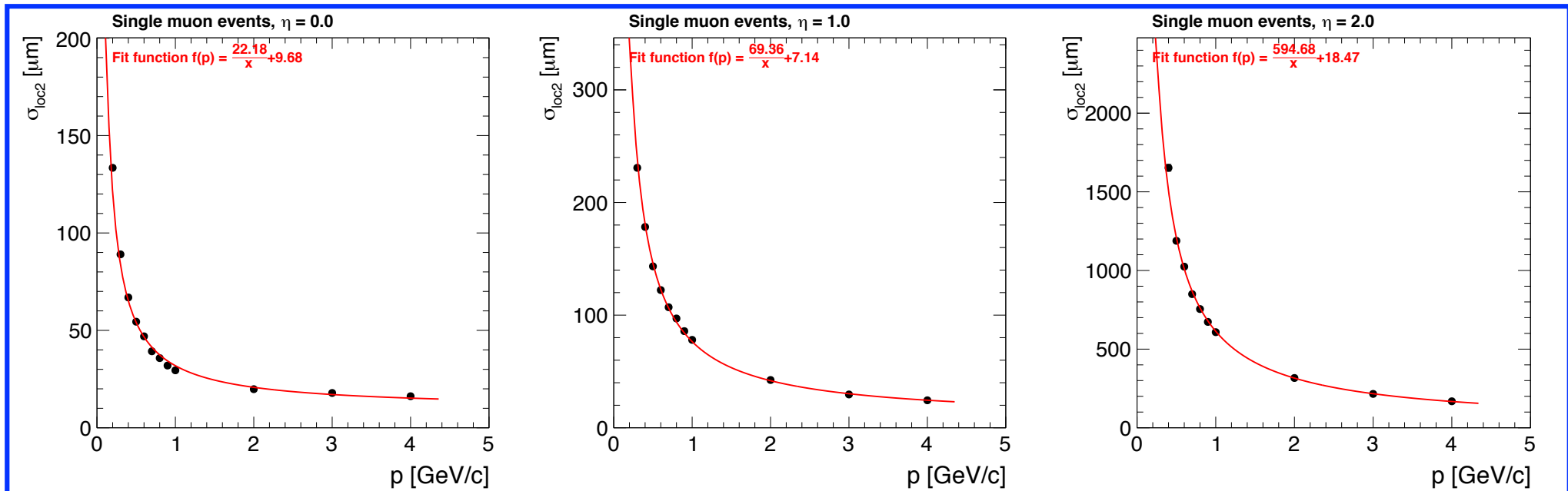
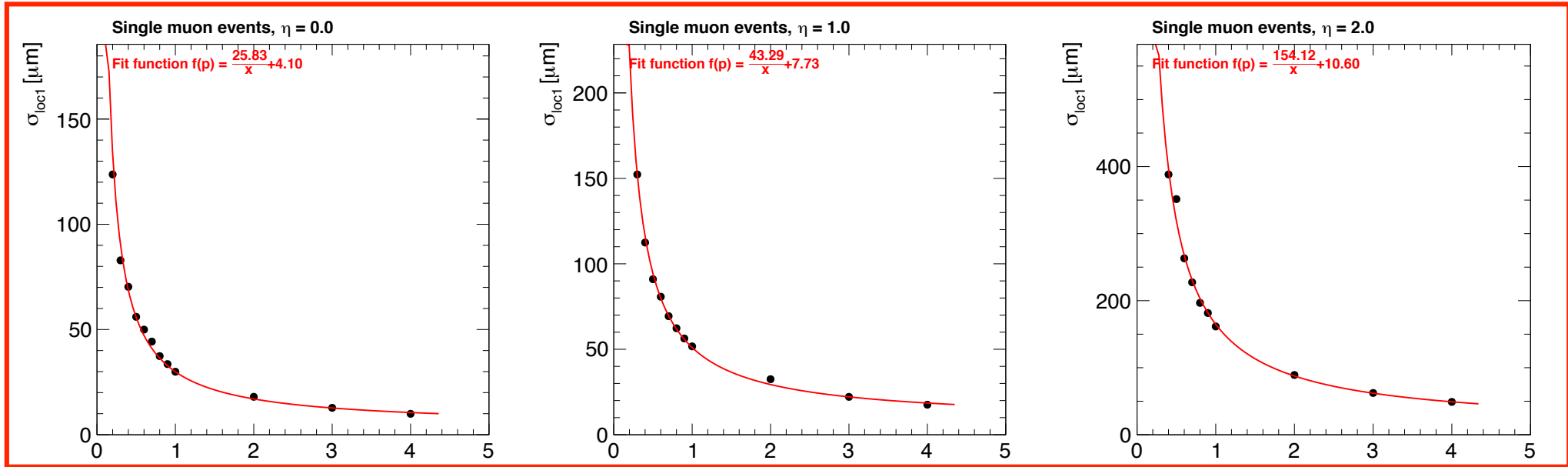


From extracted track parameters at perigee surface: $l_1 = d_0, l_2 = z_0$

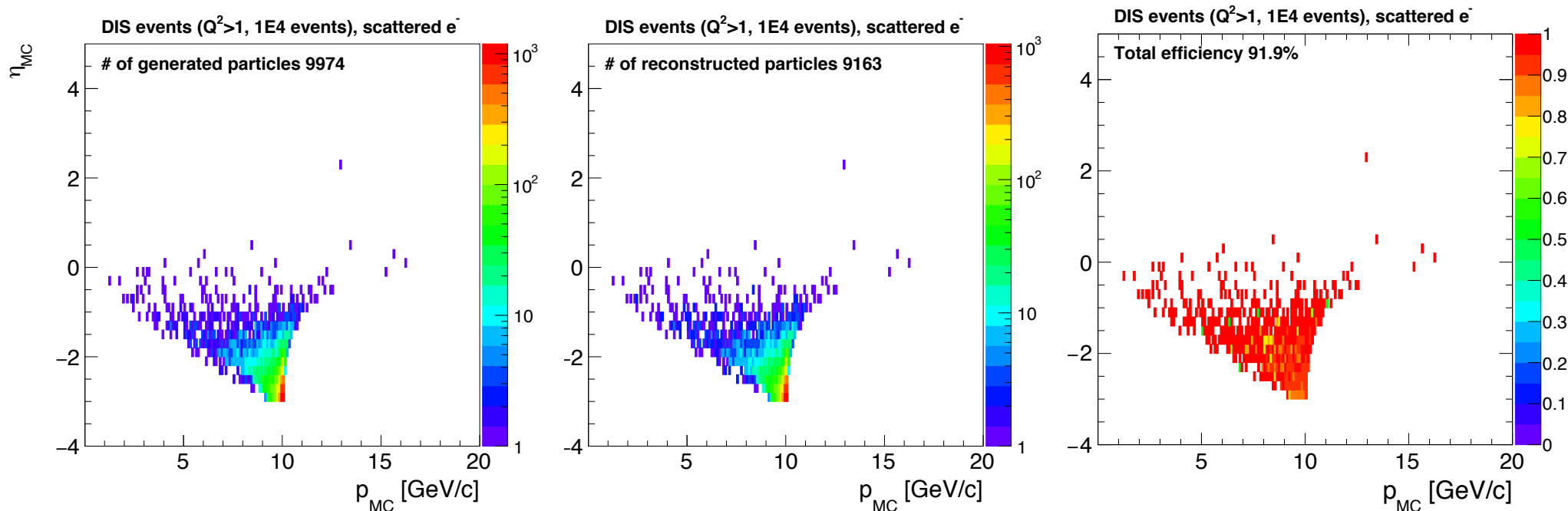
Code in
ATHENA

```
//// Construct a perigee surface as the target surface
auto pSurface = Acts::Surface::makeShared<Acts::PerigeeSurface>(Acts::Vector3{0., 0., 0.});
```

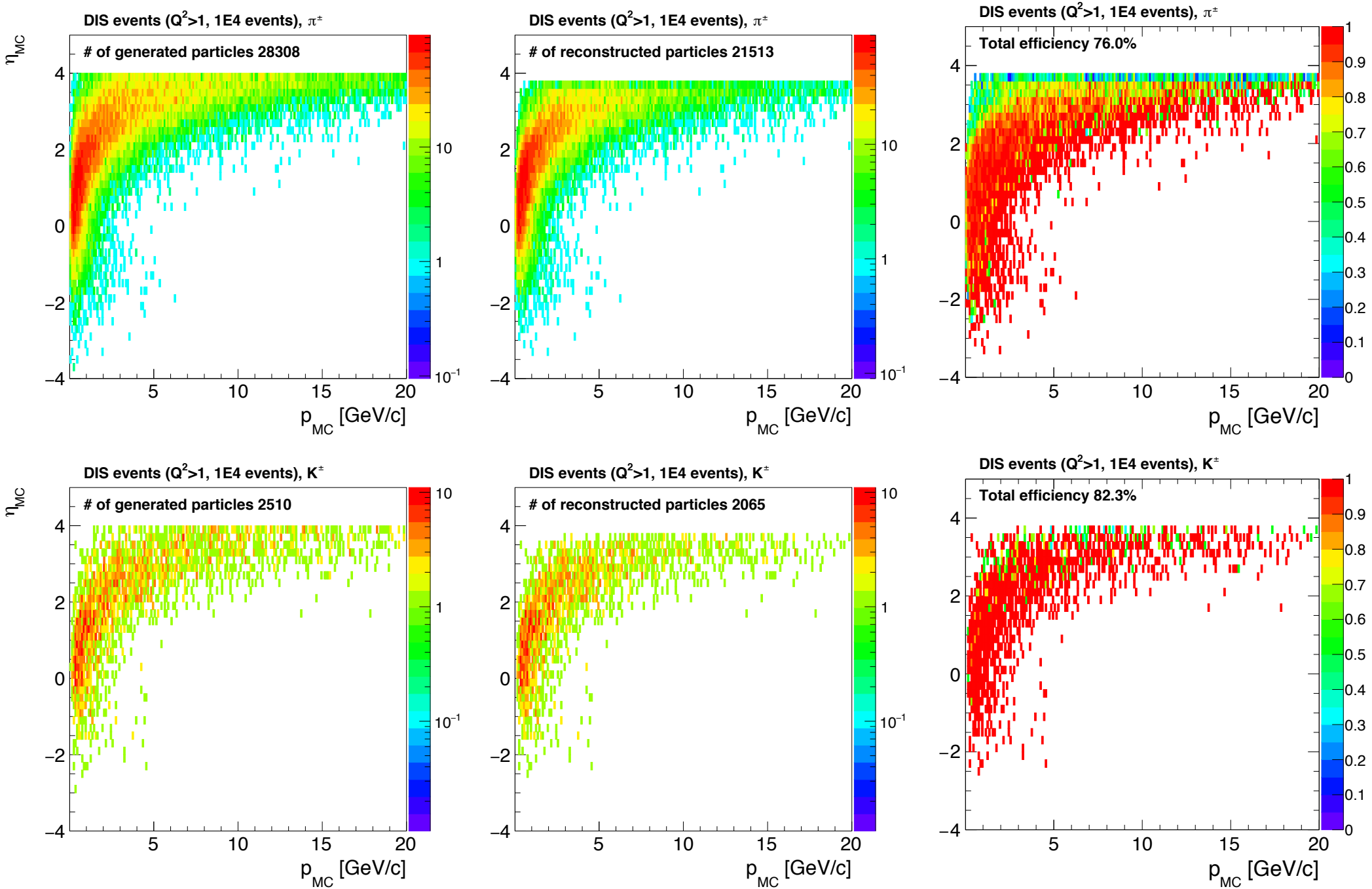
► $\text{loc1} = d_0$ (?DCA $_{r\phi}$), $\text{loc2} = z_0$ (?DCA $_z$)

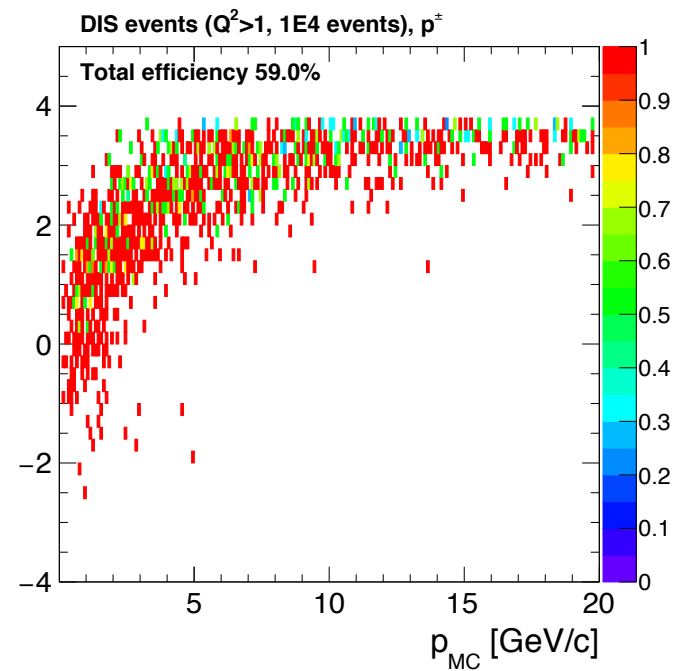
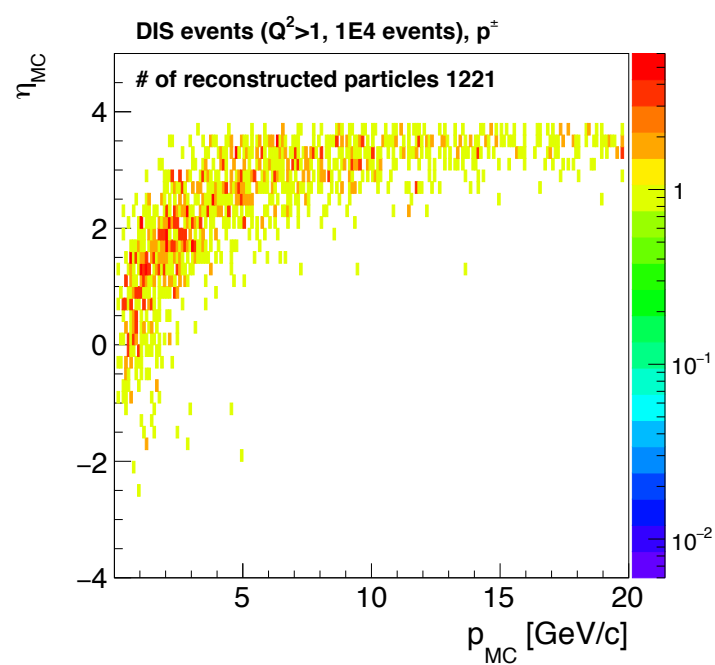
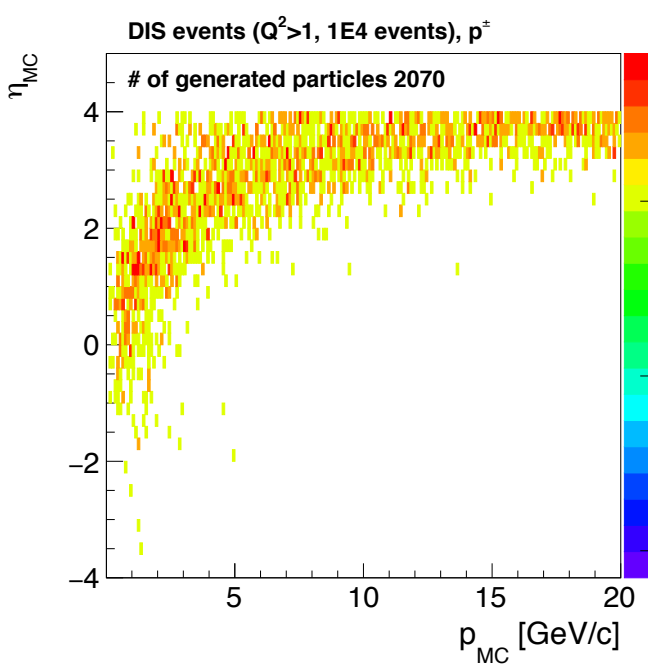


- ▶ Look at one DIS full simulation file
 - ◆ Loop through all the reconstructed particles which are matched to generated particles (charged, stable) ➡ # of reconstructed particles
 - ◆ Loop through all the generated particles (charged, stable) ➡ # of generated particles
 - ◆ Efficiency = # reconstructed particles / # gen particles



https://dtn01.sdcc.bnl.gov:9000/minio/eictest/ATHENA/FULL/master/DIS/NC/10x100/minQ2=1/pythia8NCDIS_10x100_minQ2=1_beamEffects_xAngle=-0.025_hiDiv_1.0066.root





- ▶ Low momentum threshold still seems good in DIS events
 - ◆ Need to check how things change with background and realistic seeding
 - ◆ Check the occupancy on each silicon layer per event (in mid rapidity low p track, tracks can't reach to EM calorimeter, loops and hit the tracker multiple times)
- ▶ Check MB events (lower Q^2 cut and other energy combination)