

Checks on beam halo MC (22X)

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List of samples

- 226, beam halo (with hadrons):
/castor/cern.ch/user/b/boudoul/226/BH/RECOHAD/step2_TrackerHaloMuon_1.root
- 226, beam halo (without hadrons):
/castor/cern.ch/user/b/boudoul/226/BH/RECOwoHAD/step2_TrackerHaloMuon_1.root

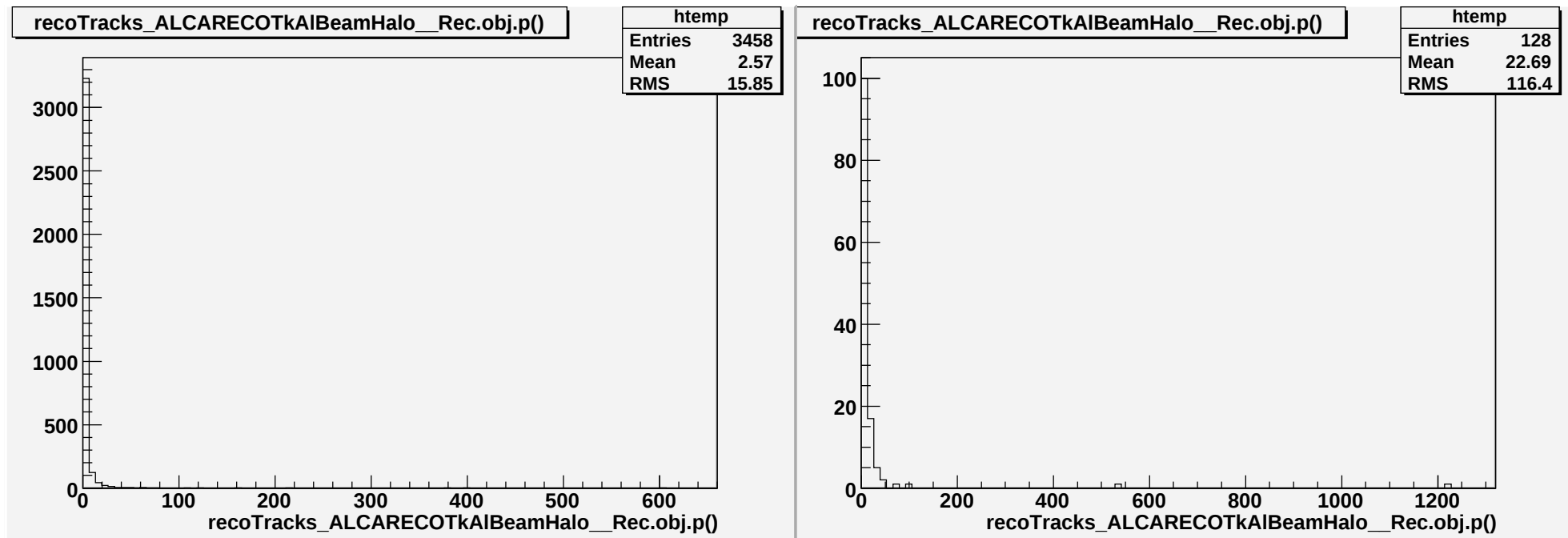


Some numbers

- BH with Had.
 - 184 events
 - 3458 recoTracks (18 per evt)
 - 30464 SimTracks
 - 26942 TrackingParticles
- BH w/o Had.
 - 146 events
 - 128 recoTracks (~1 per evt)
 - 156 SimTracks
 - 156 TrackingParticles

recoTracks

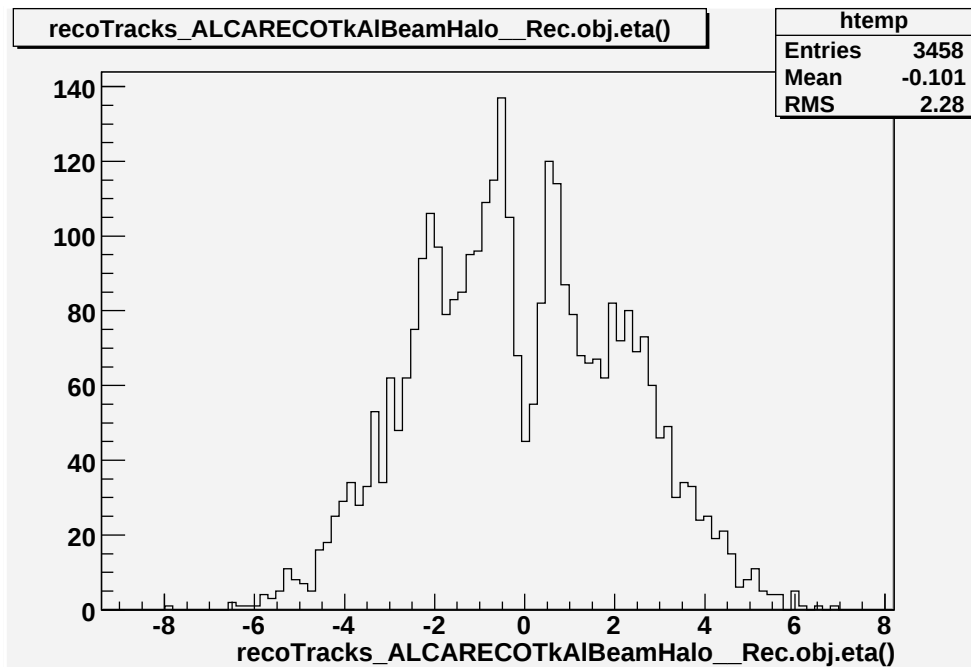
- with Had:
 - softer p, $\langle p \rangle = 2.6$ GeV
- w/o Had:
 - harder p, $\langle p \rangle = 22$ GeV



recoTracks

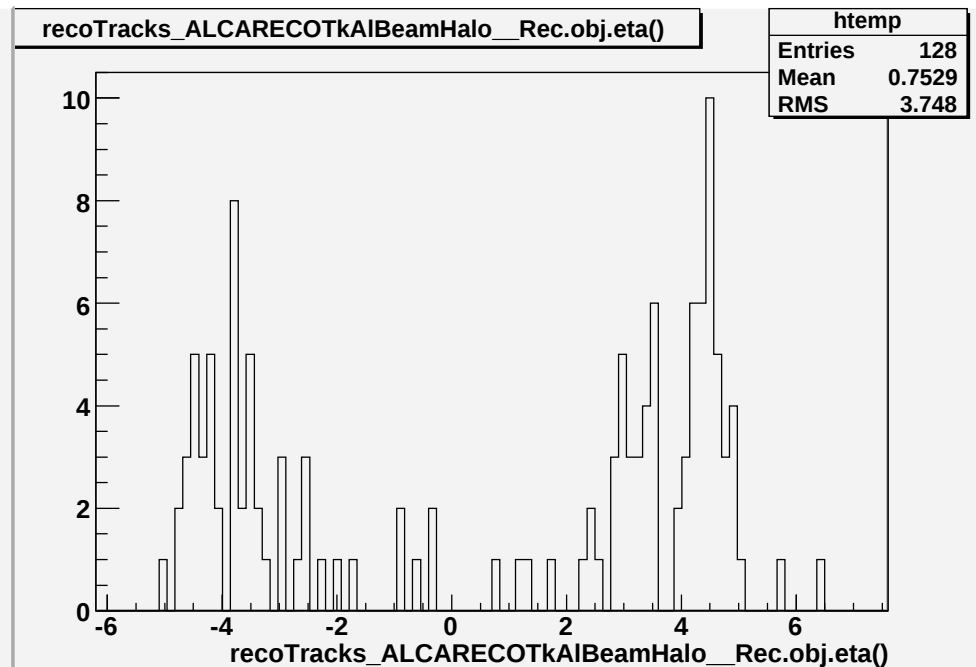
- with Had:

- many tracks at $\eta \approx 0$



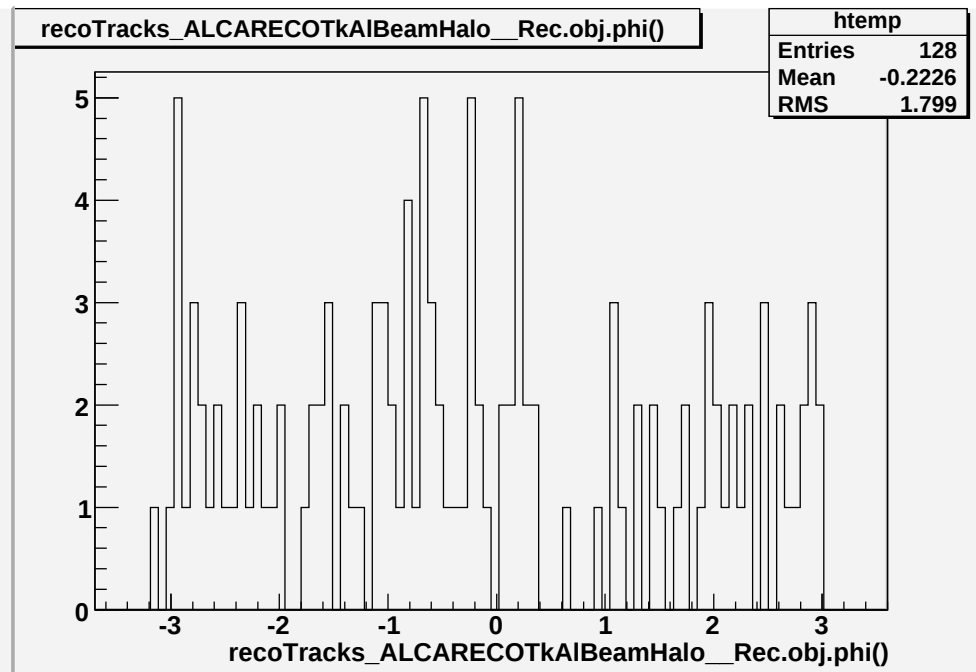
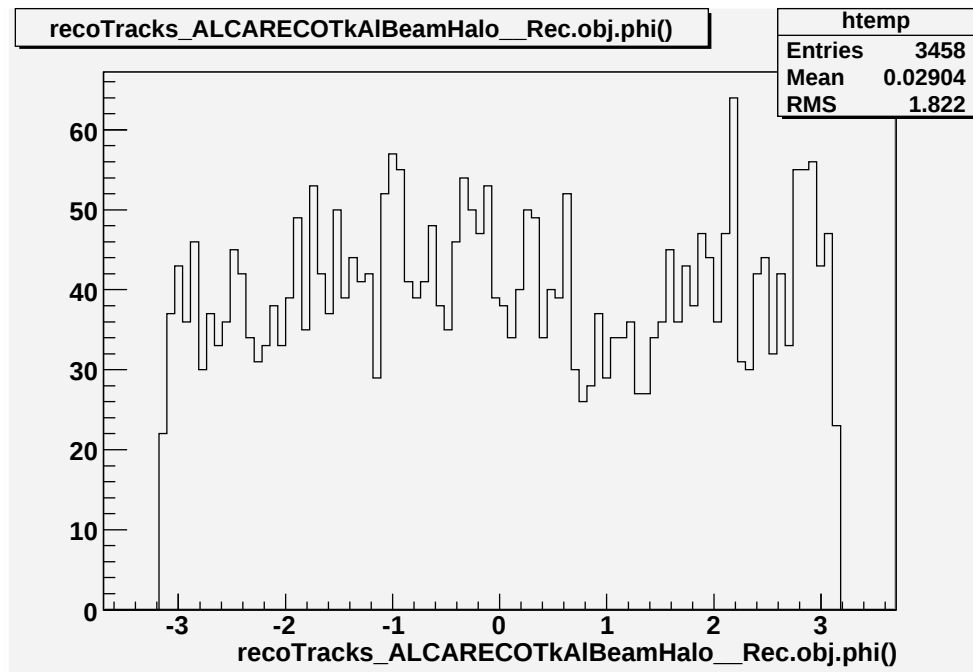
- w/o Had:

- few tracks at $\eta \approx 0$, as expected



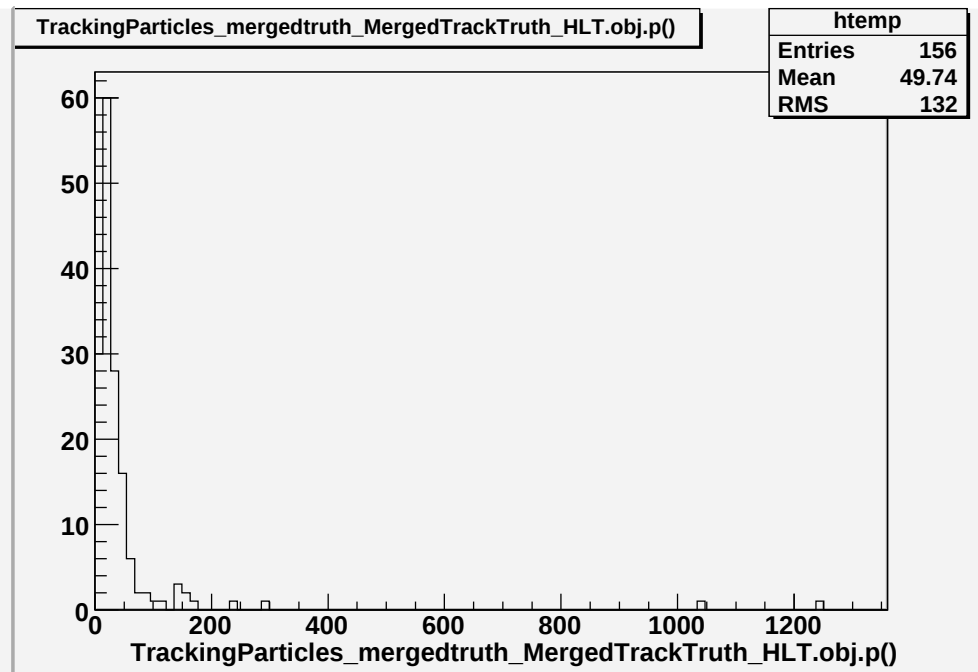
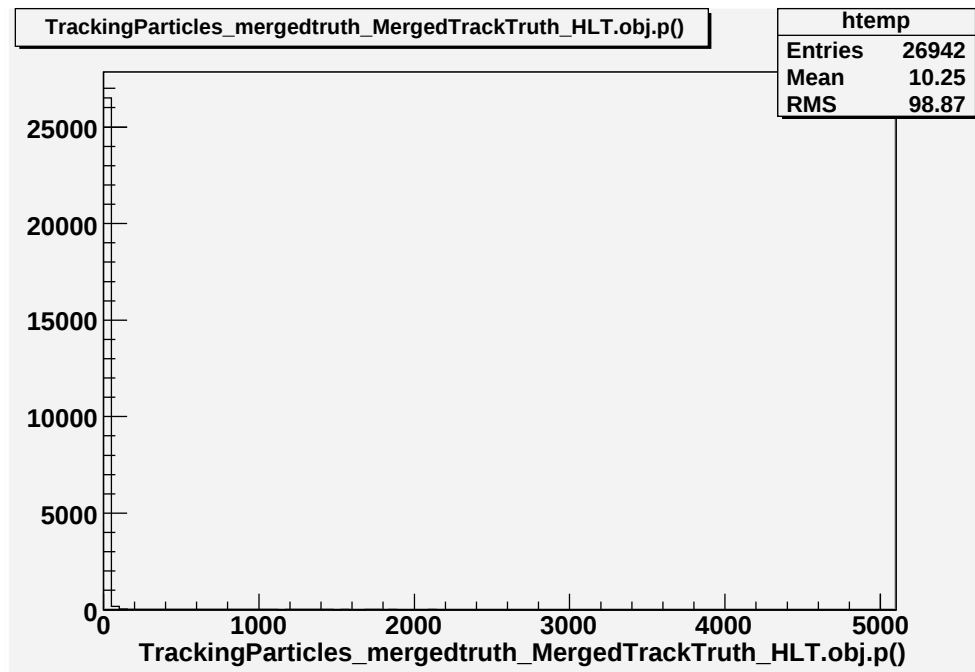
recoTracks

- with Had:
 - flat phi distribution
- w/o Had:
 - flat phi distribution



TrackingParticles

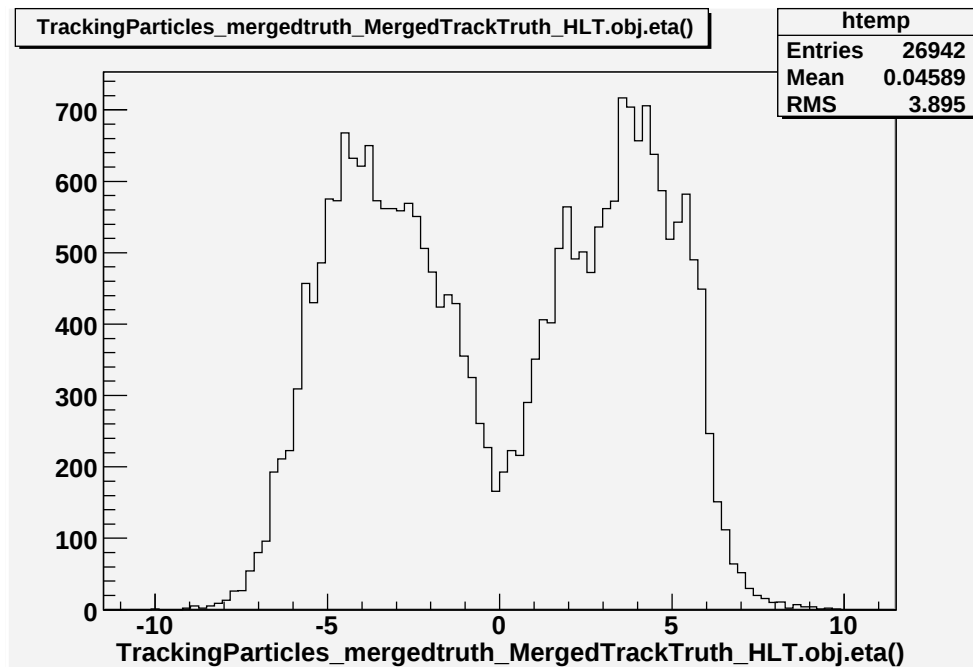
- with Had:
 - softer p
- w/o Had:
 - harder p



TrackingParticles

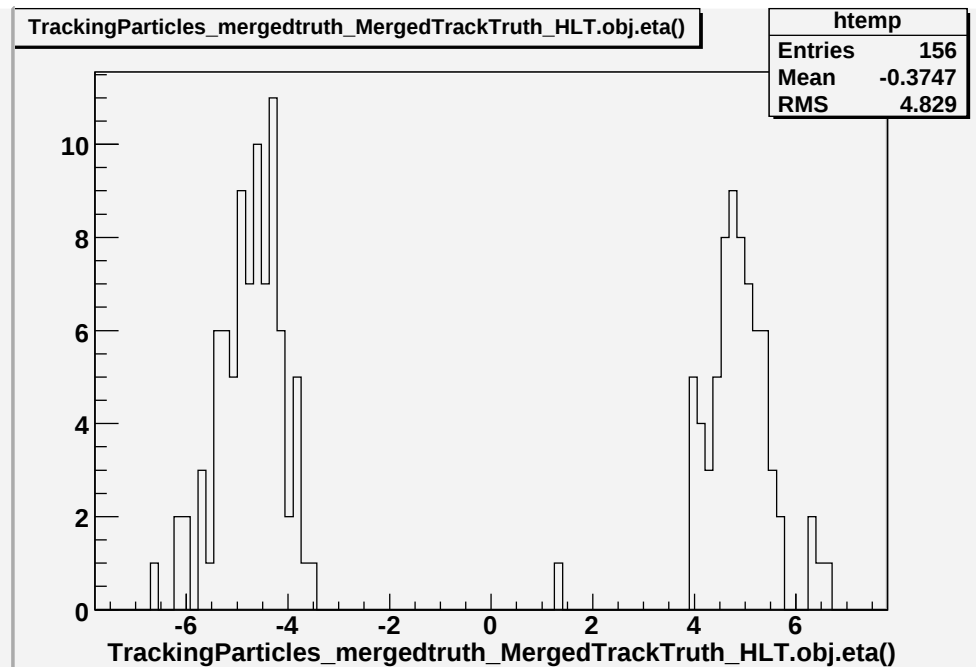
- with Had:

- many generated particles at $\eta \approx 0$



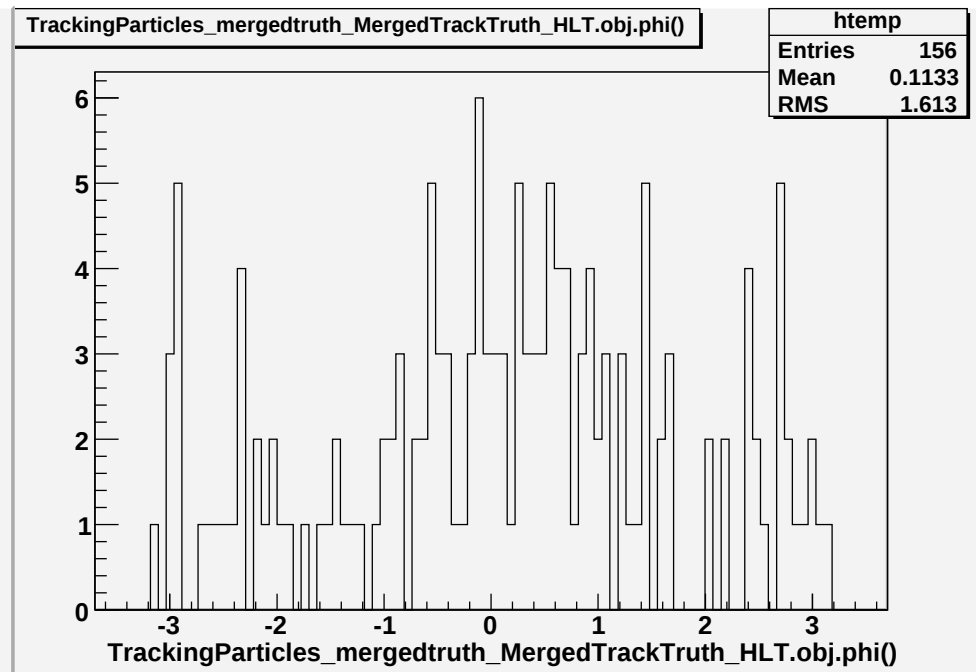
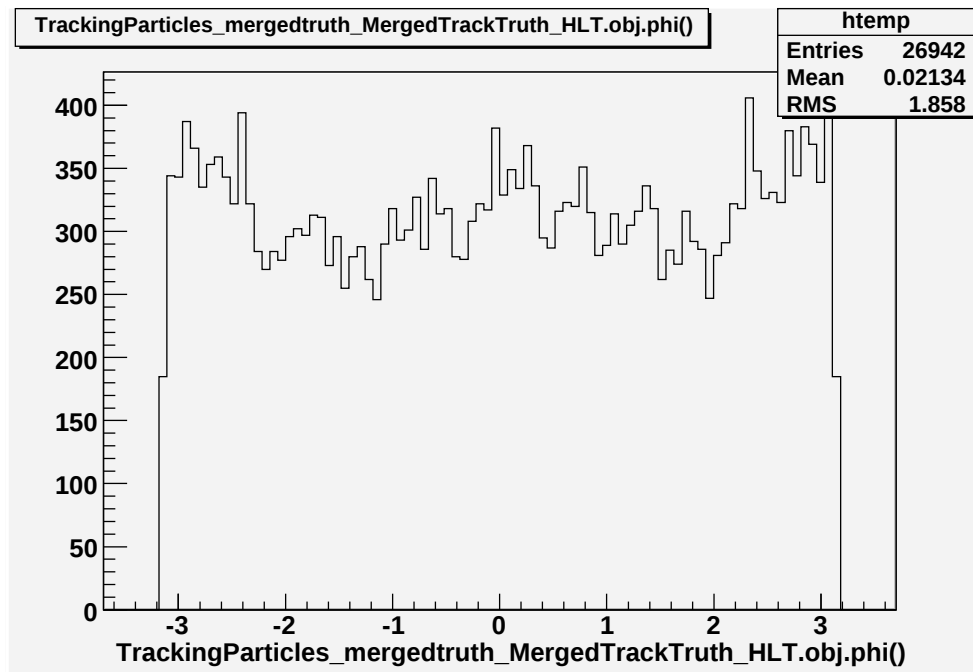
- w/o Had:

- almost no generated particles at $\eta \approx 0$



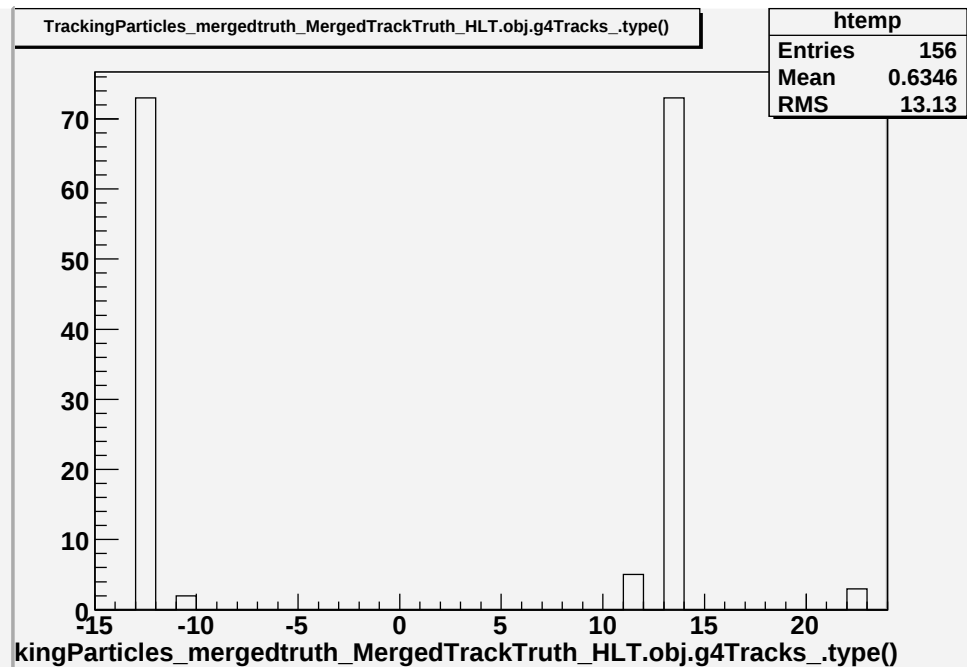
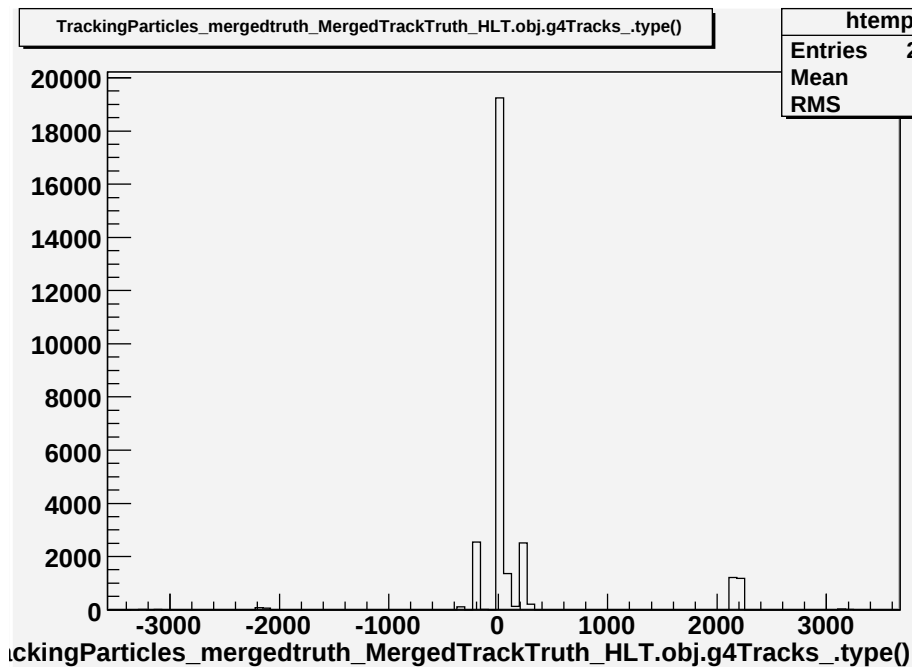
TrackingParticles

- with Had:
 - flat phi distribution
- w/o Had:
 - flat phi distribution



TrackingParticles

- with Had:
- w/o Had:
 - only few particle types



Conclusions

- The sample w/o hadrons looks much the same as the 20X production.
- The sample with hadrons has much more tracks. They are softer and not distributed as beam halo muons.
- Both samples look reasonable, but of course the one w/o hadrons is not expected to be able to describe the real events.