# Comparison between full and fast simulation



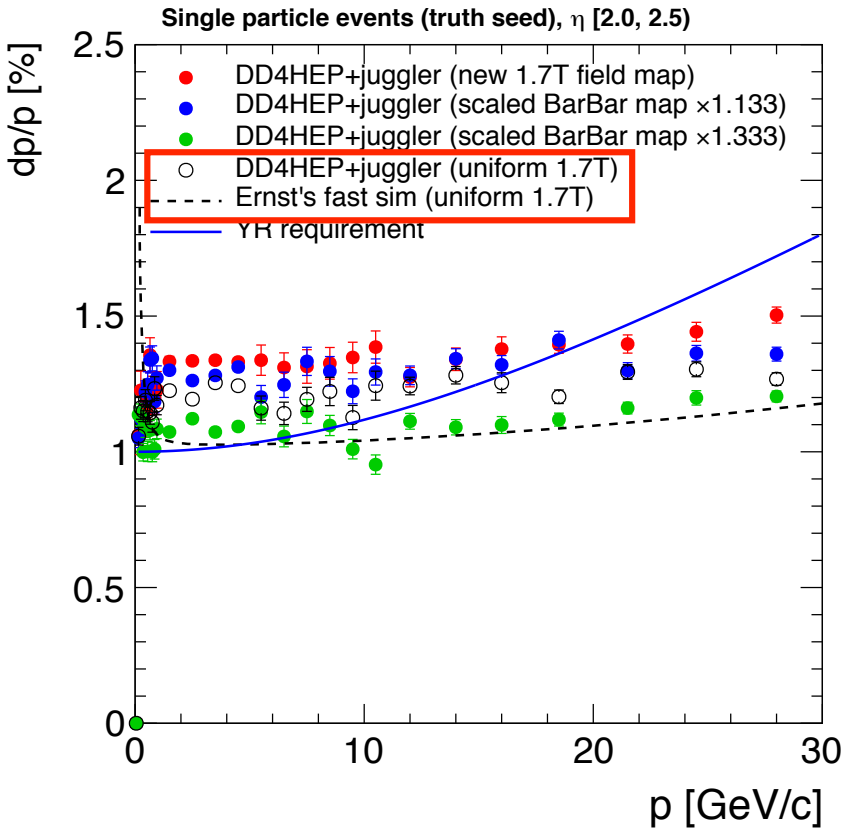
- Same (symmetric) geometry with uniform 1.7T field
  - Barrel MPGD: spatial resolution 150um, r= 51cm
  - Barrel silicon: spatial resolution 10um/sqrt(12), r= 3.6, 4.8, 12, 27, 42cm
  - Endcap silicon: spatial resolution 10um/sqrt(12), z = 25, 45, 70, 100, 135cm
  - Support cone included in full simulation

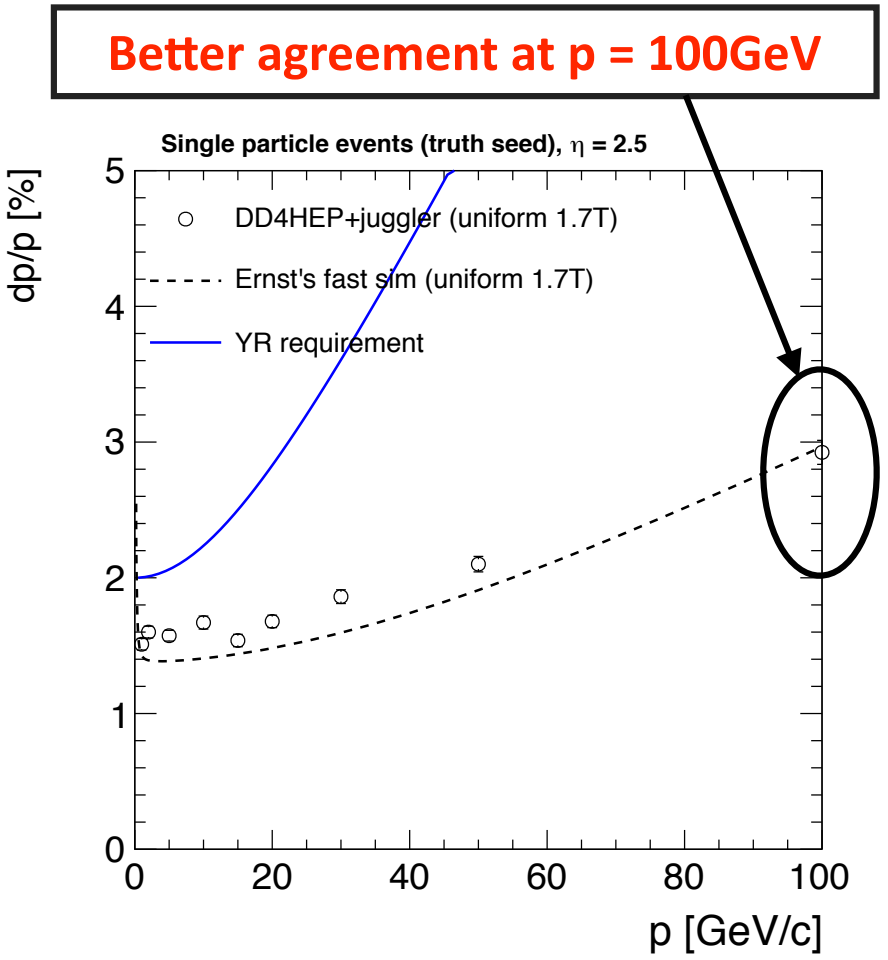
- Test events
  - Single pion events where pions are generated with fixed p and η
  - 1000 events per configuration

# Comparison between full and fast simulation



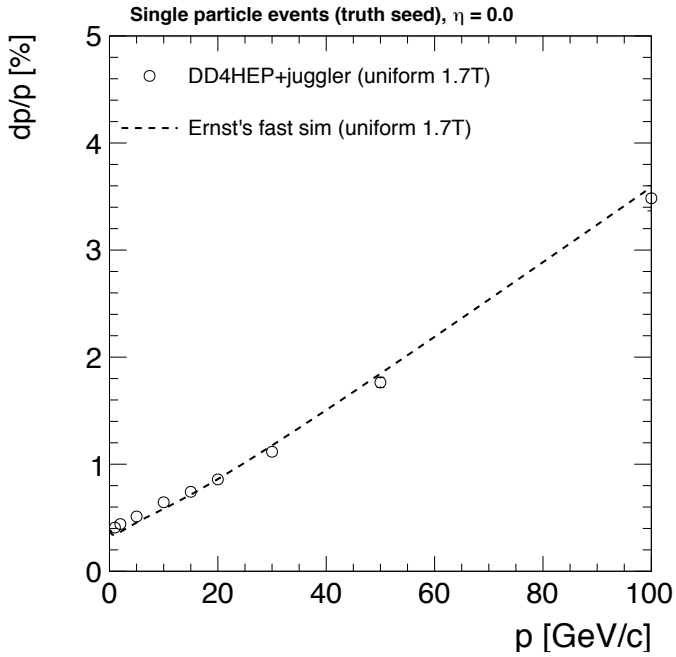
- Discrepancy between full and fast simulation
  - Support cone not included in the fast simulation
  - Different material for disks: 0.24% per disk in fast simulations and >0.29% per disk in the full simulation (0.29%, 0.33%, 0.34%, 0.36%, 0.38%)

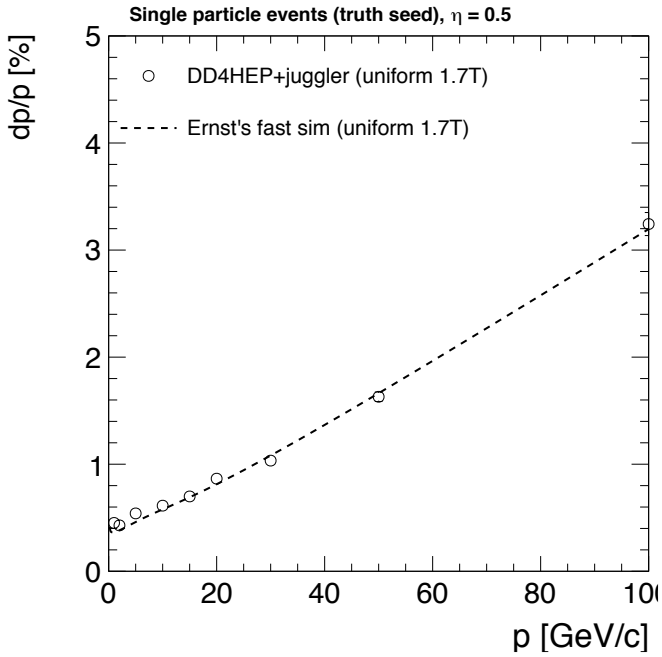


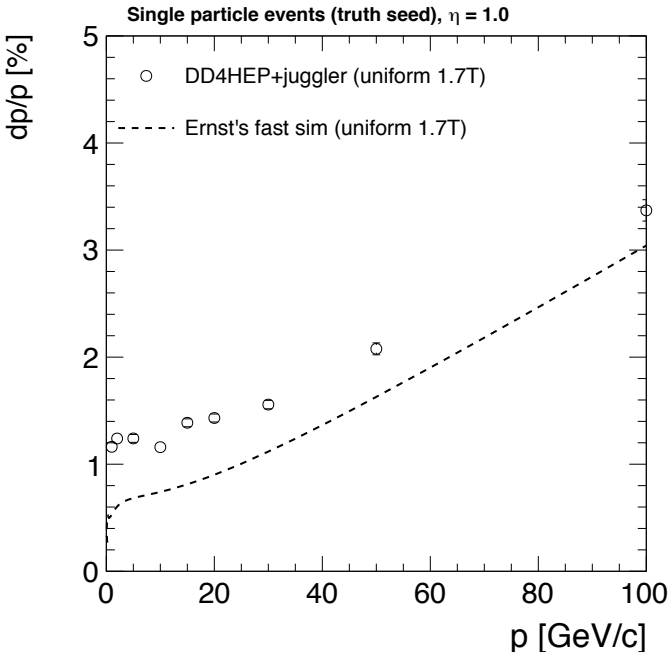



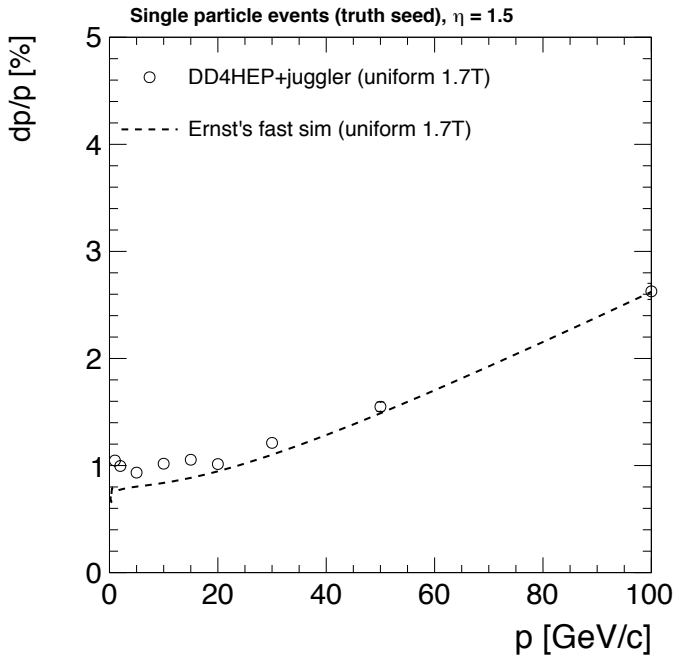
# Comparison between full and fast simulation

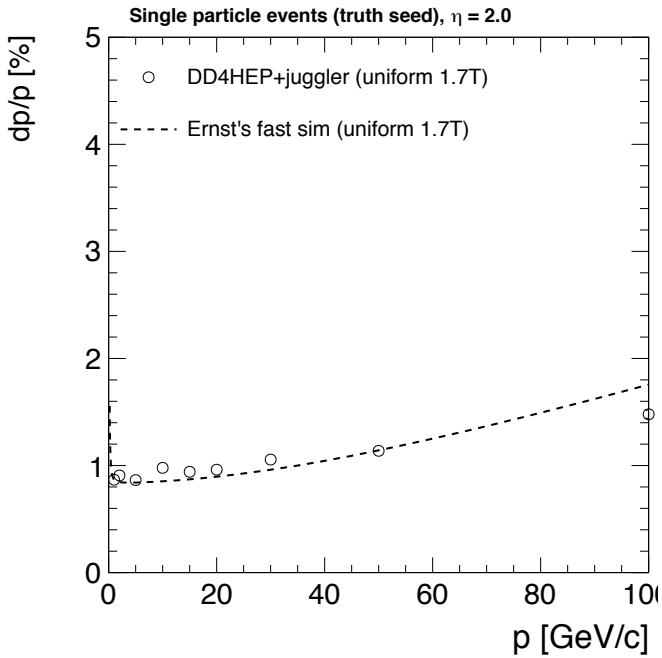


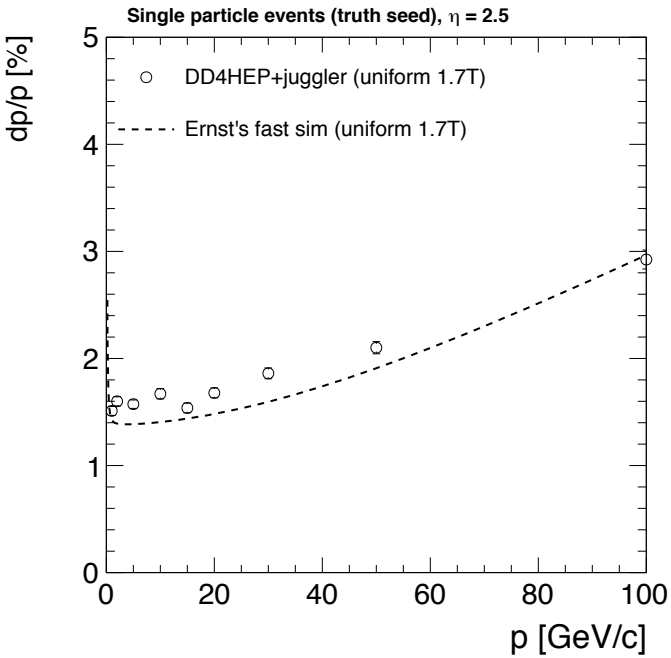


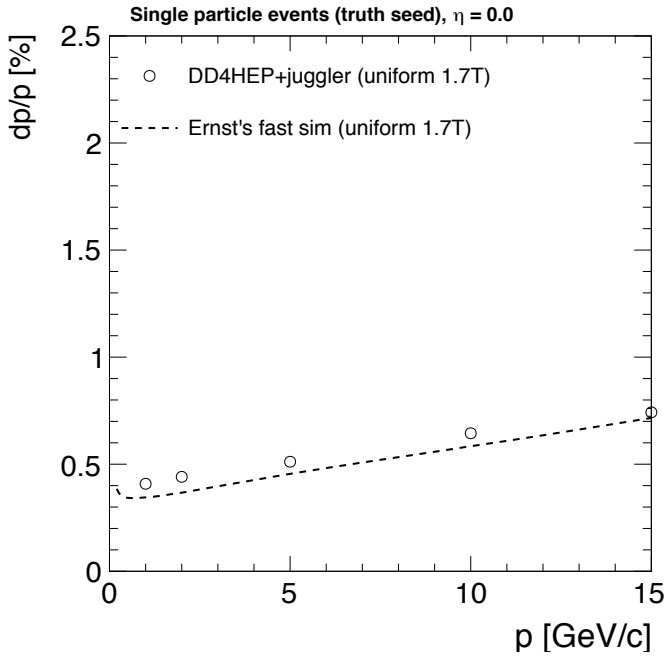



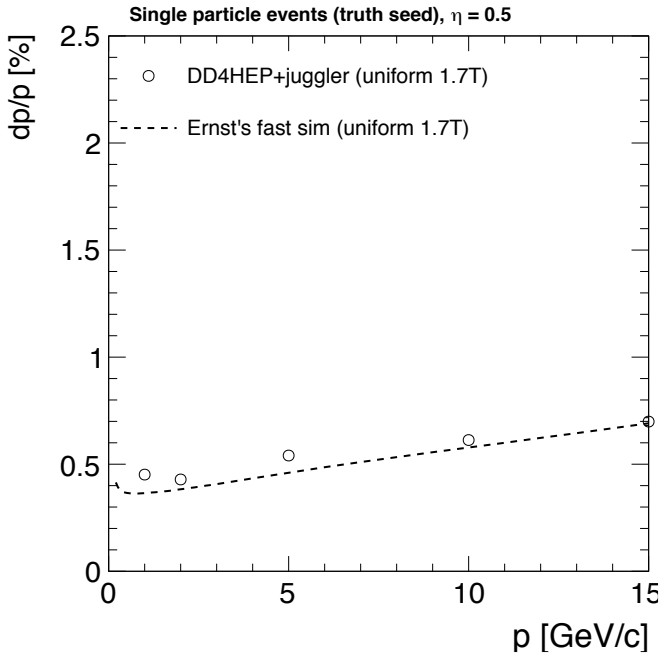



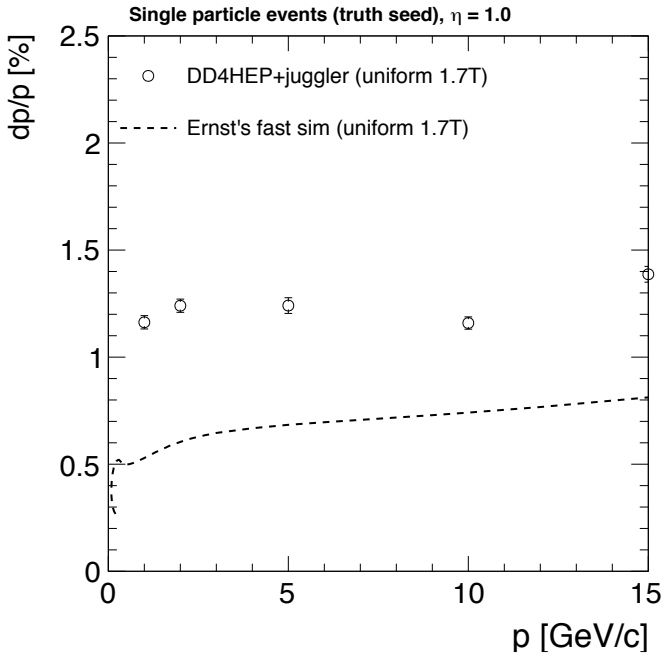



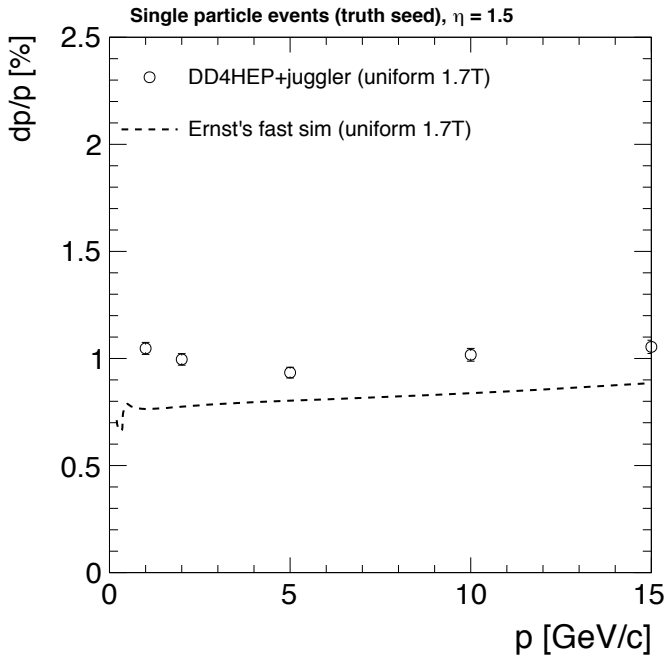
# Comparison between full and fast simulation (zoom in)

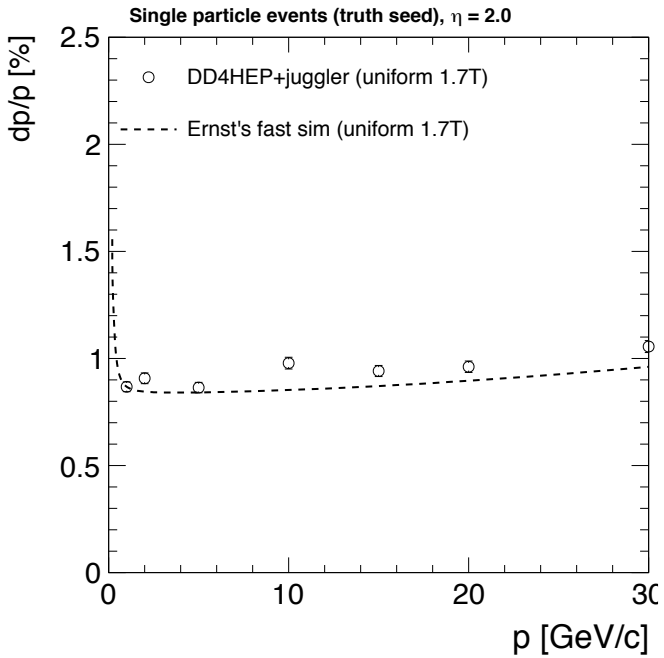


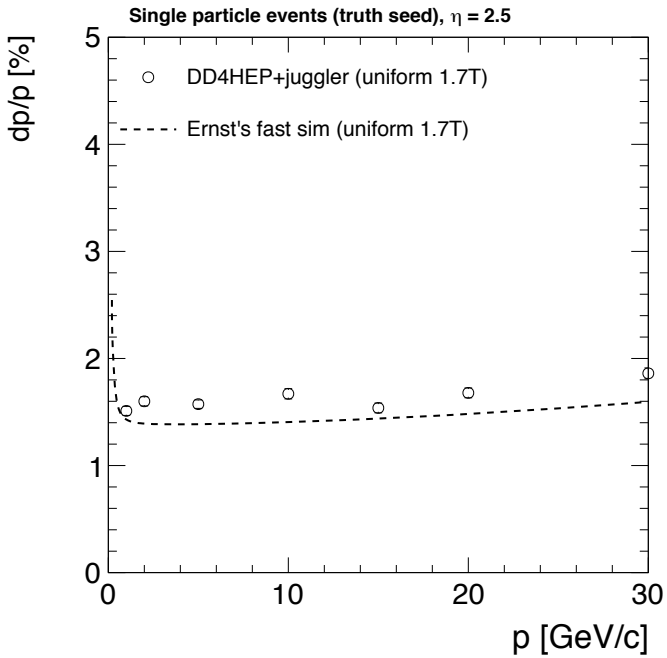


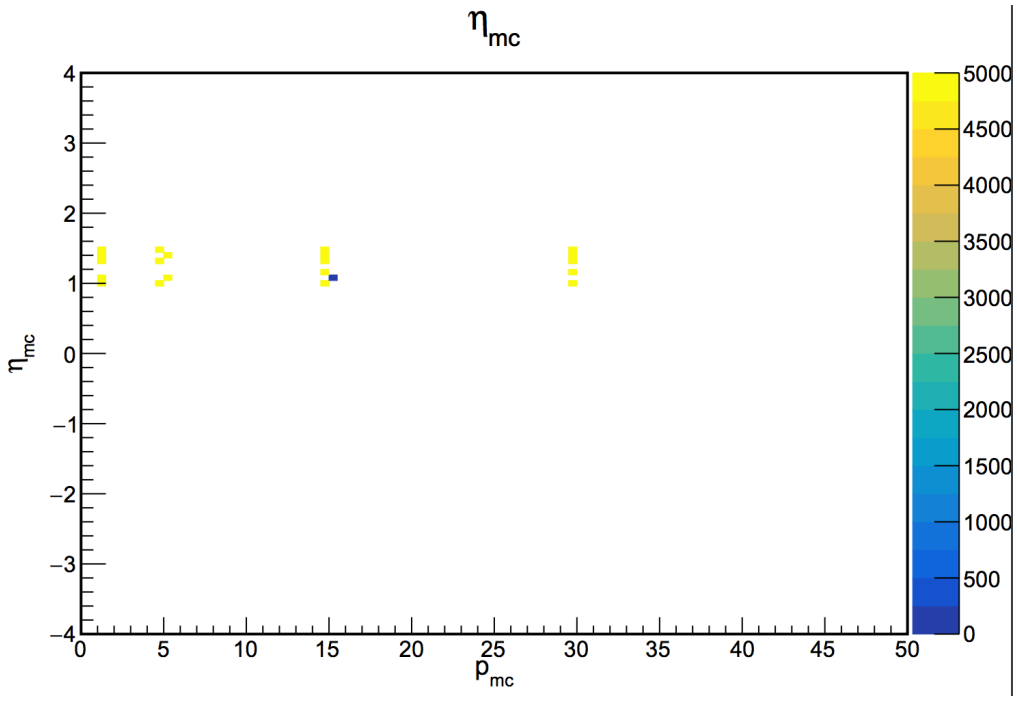



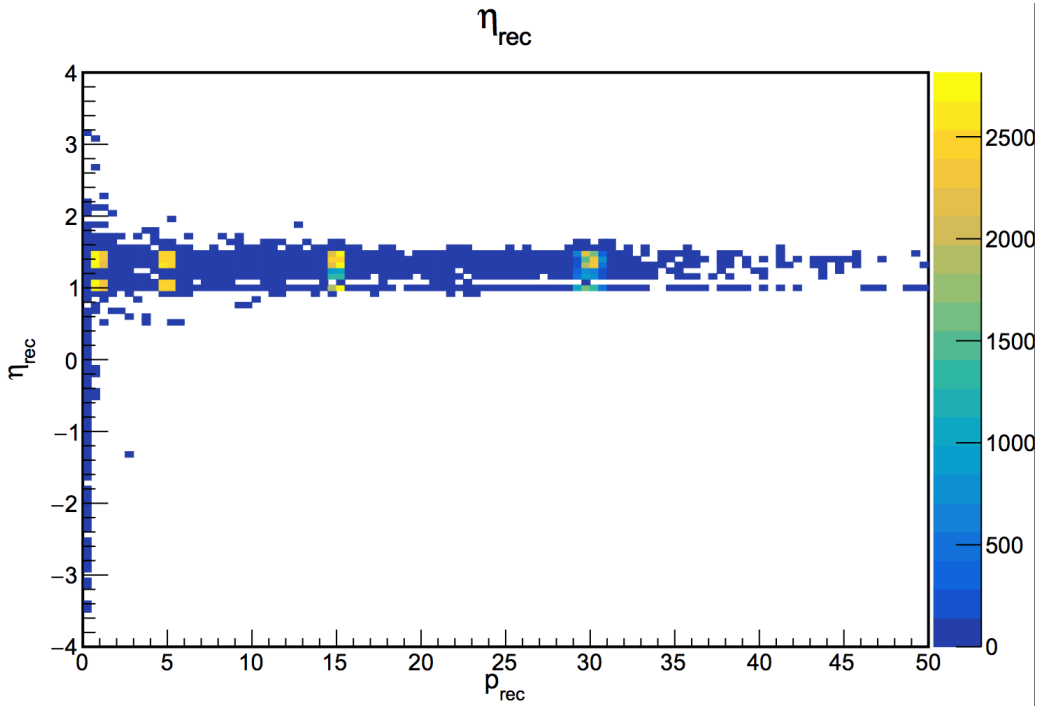



# Acceptance study with truth seeding (from Beatrice)



- Tagged geometry (epic_brycecanyon)
- Single pion events with fixed p
  - p = 1, 5, 15, 30GeV
  - η = 1, 1.1, 1.2, 1.3, 1.4, 1.5



# Acceptance study with truth seeding (from Beatrice)



- Tagged geometry (brycecanyon)
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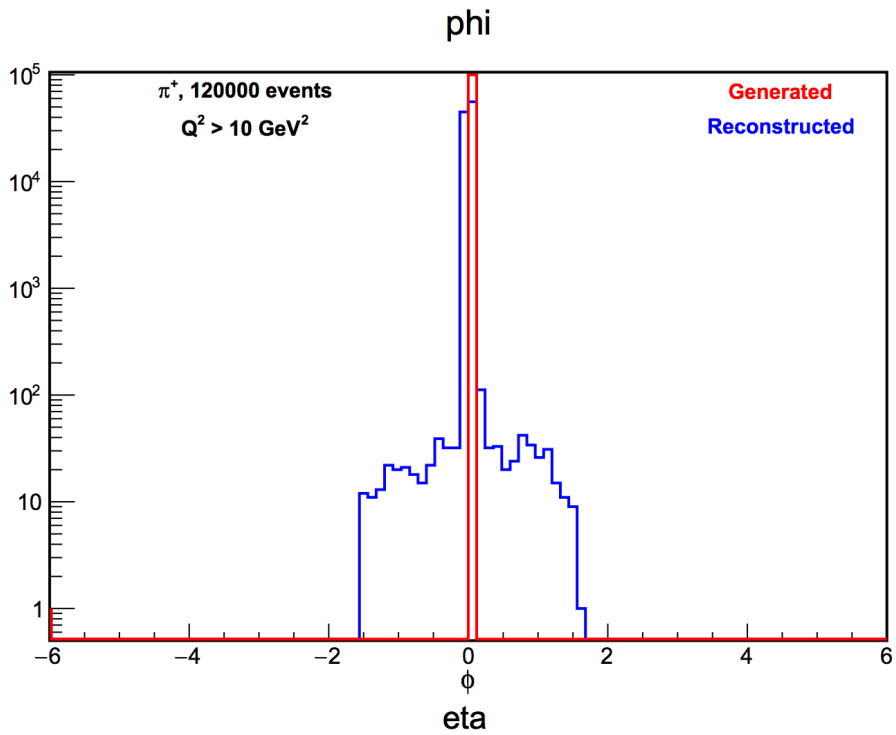
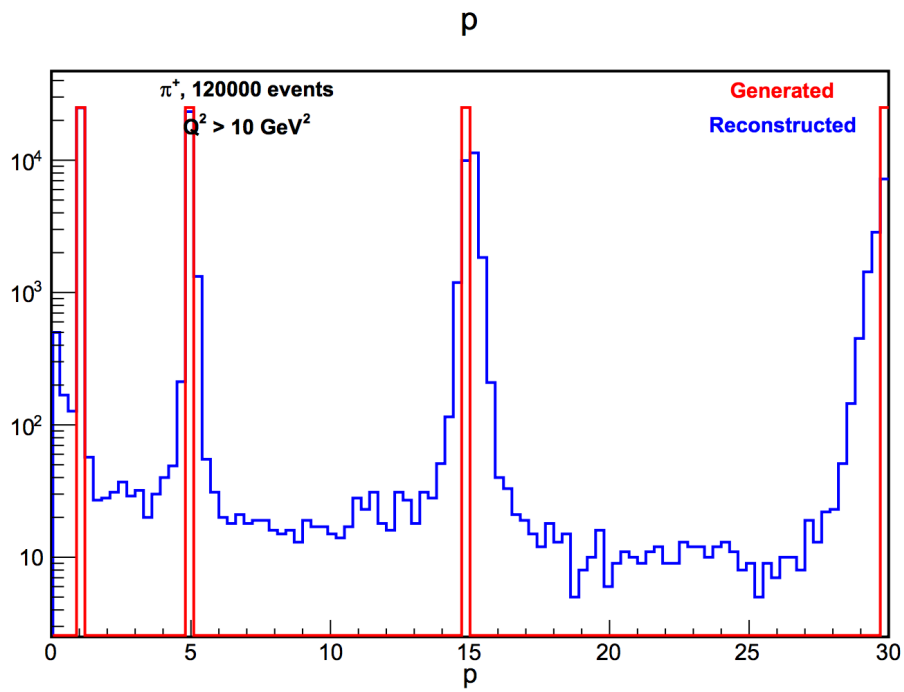
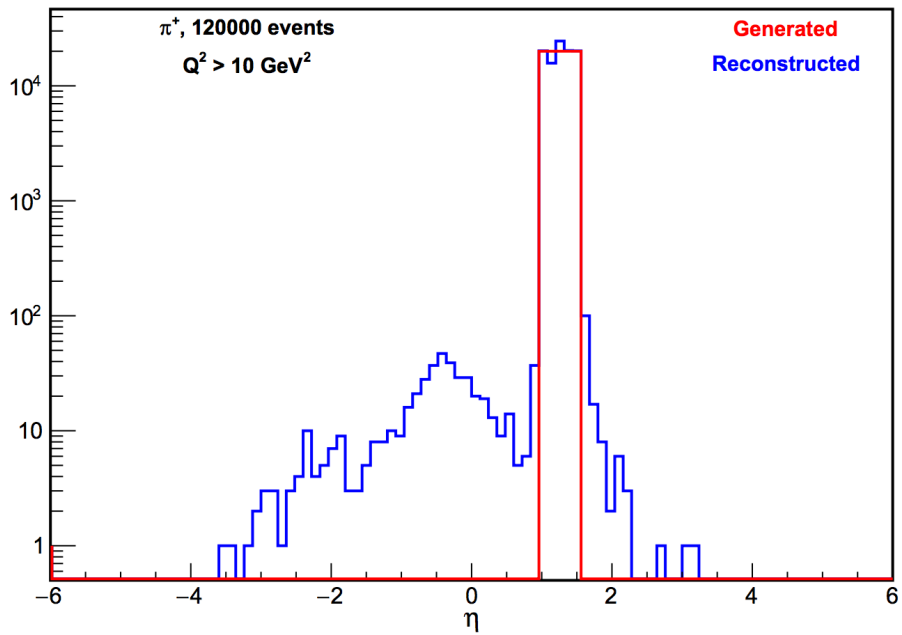
  - p = 1, 5, 15, 30GeV
  - η = 1, 1.1, 1.2, 1.3, 1.4, 1.5



# Summary



- Comparison between full and fast simulation
  - Performance difference comes from the material difference (better agreement at 100GeV)
- Check the performance of updated magnetic field map and present the impact of different B field at the tracking meeting
- Beatrice generated simulation outputs for particles going around the support cone
  - Looking into the acceptance effect with truth seeding
  - Same simulation files can be used for realistic seeding study