AHCAL vs. DHCAL

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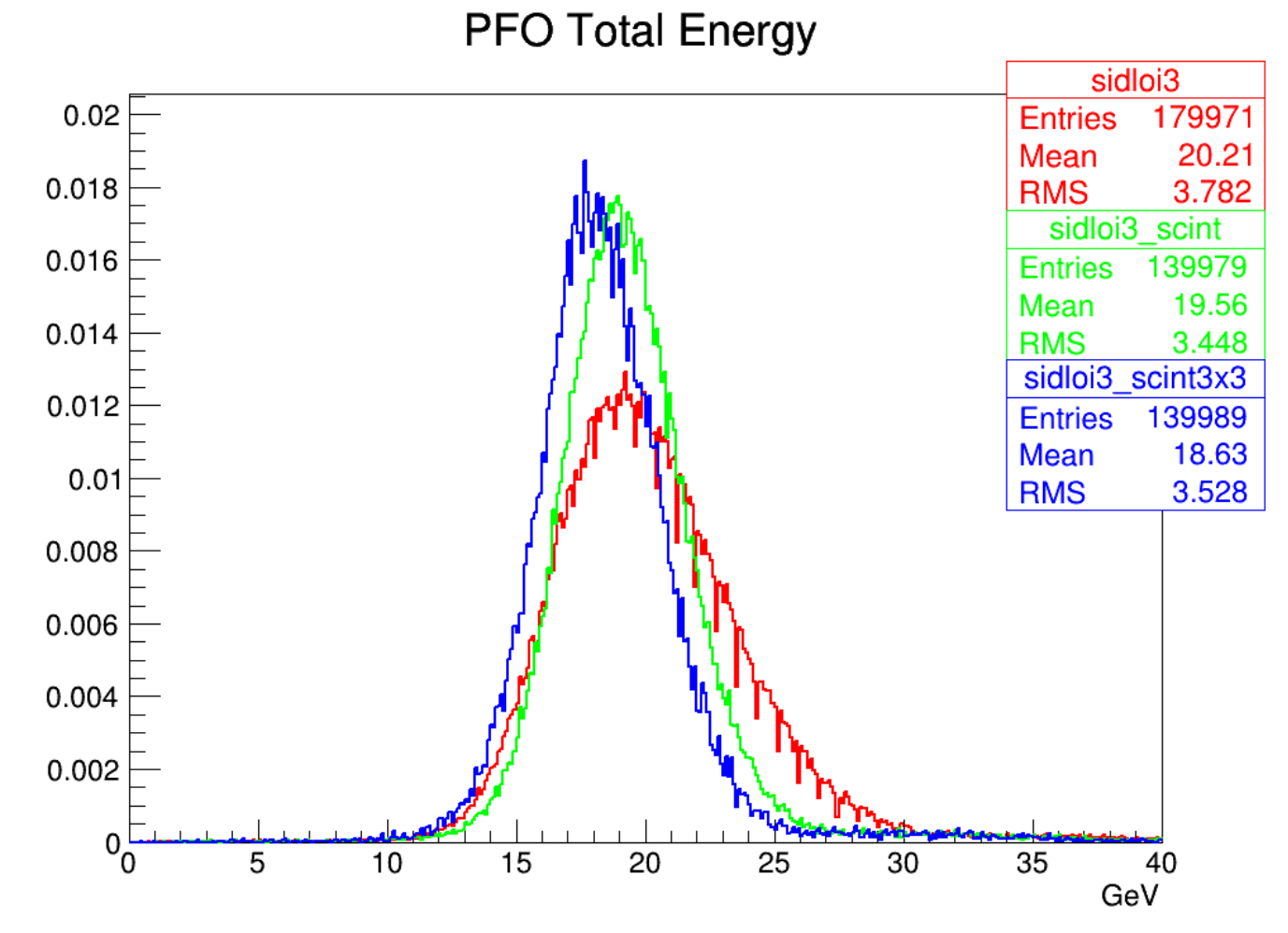
27/08/2014

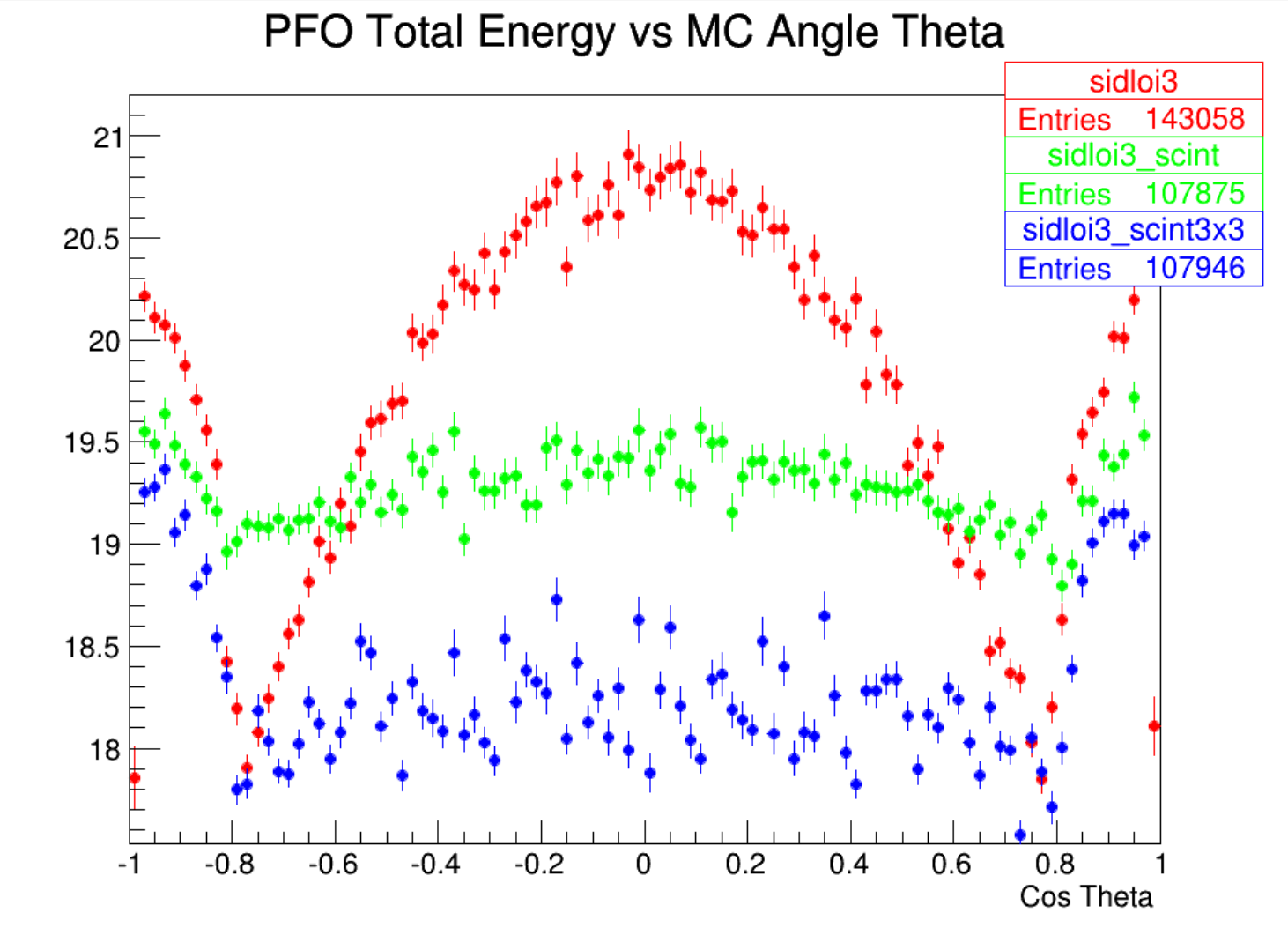
HCAL comparison with SiD

- Using DBD reco suite
- Three variants
  - Sidloi3 (baseline, DHCAL RPC 1x1 cm)
  - sidloi3_scint (AHCAL 1x1 cm)
  - sidloi3_scint3x3 (AHCAL 3x3 cm)
- Firing particles from 5 to 175
  - Various energies
  - Various flavours (p, n, γ)

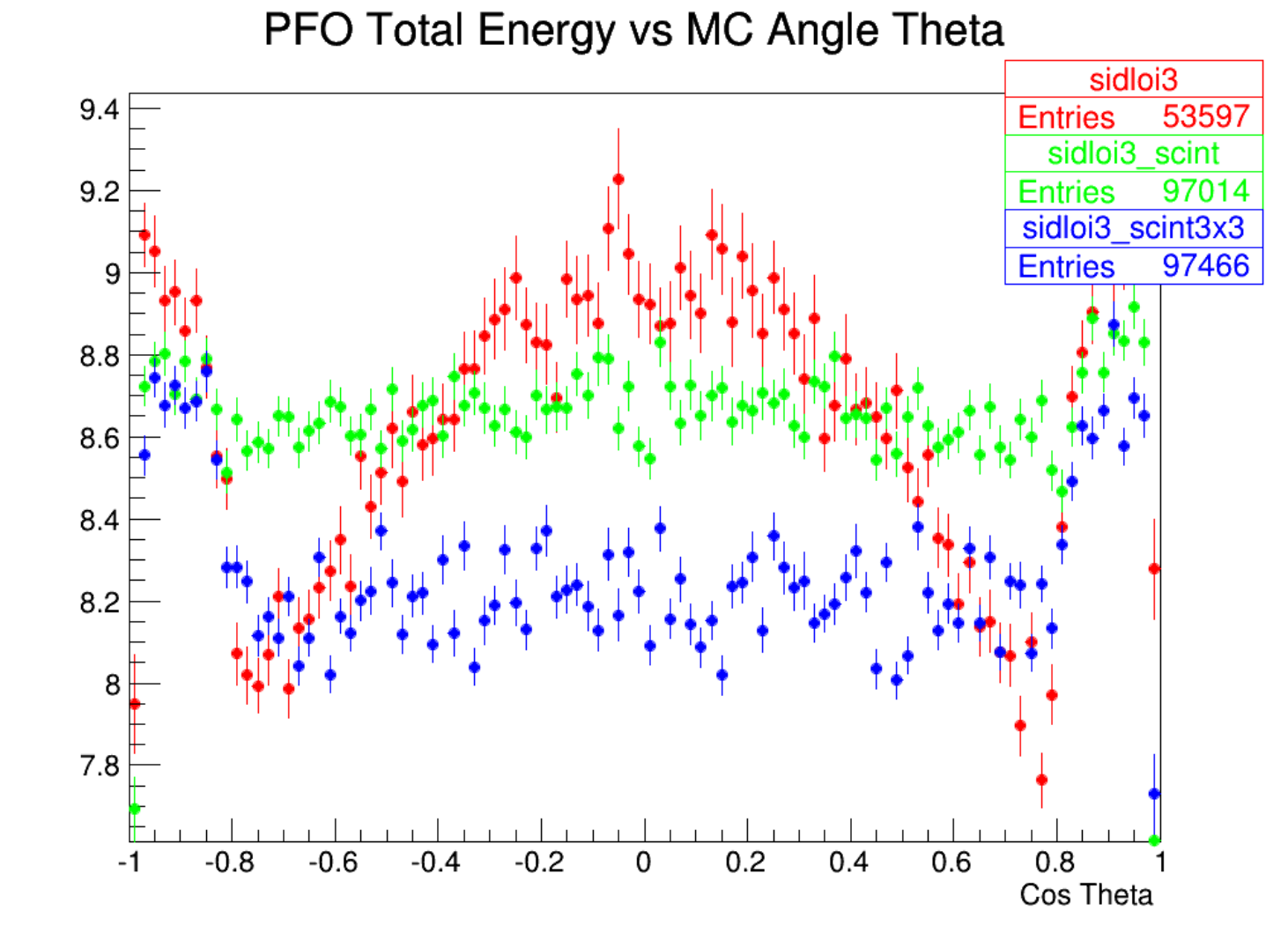
Neutrons 20 GeV



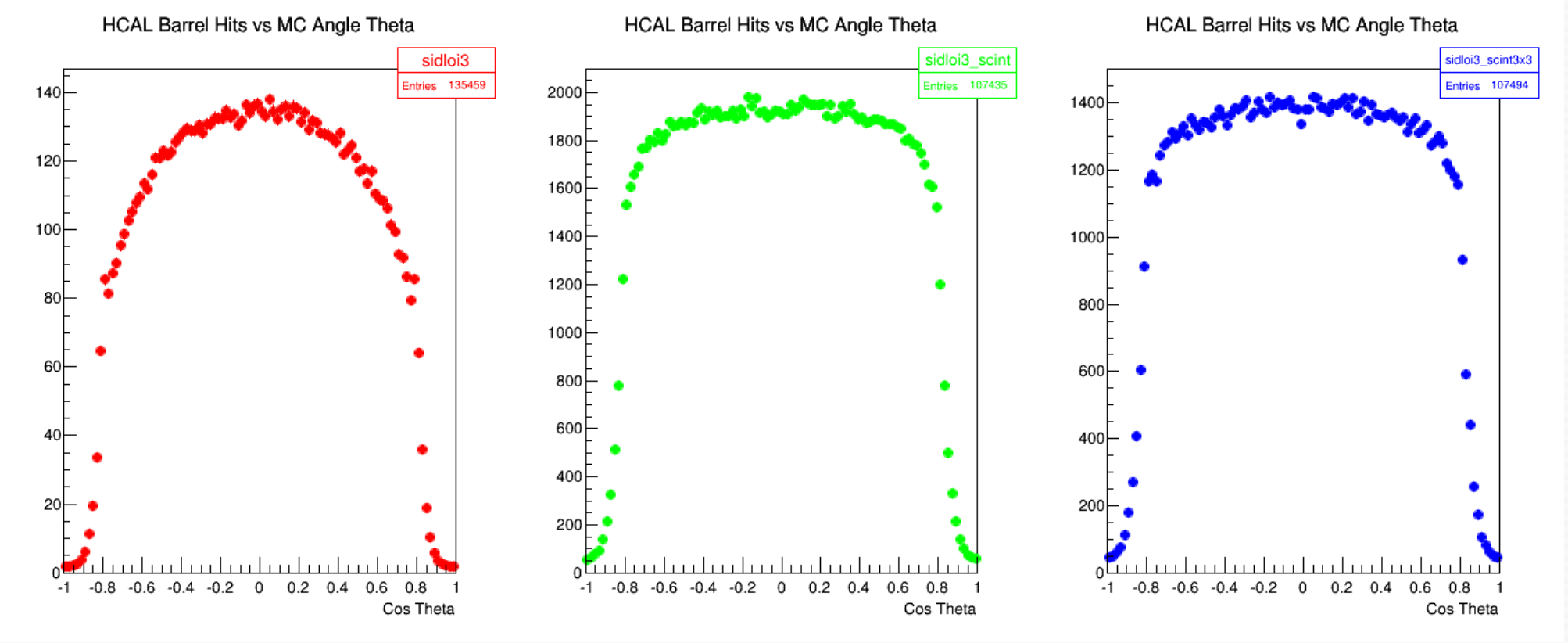
Angles :20 GeV Neutrons



Angles :10 GeV Neutrons

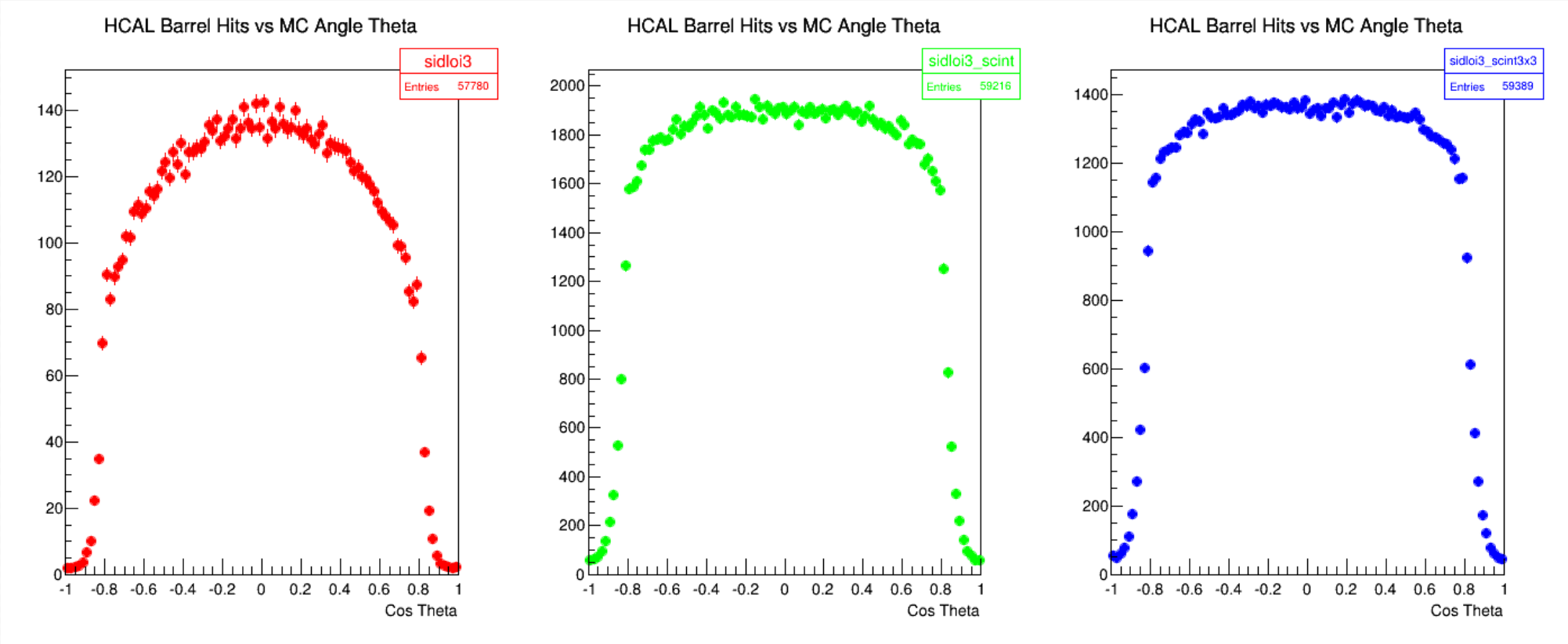


Looking at SimCalorimeterHits



20 GeV Neutrons

Protons 20 GeV



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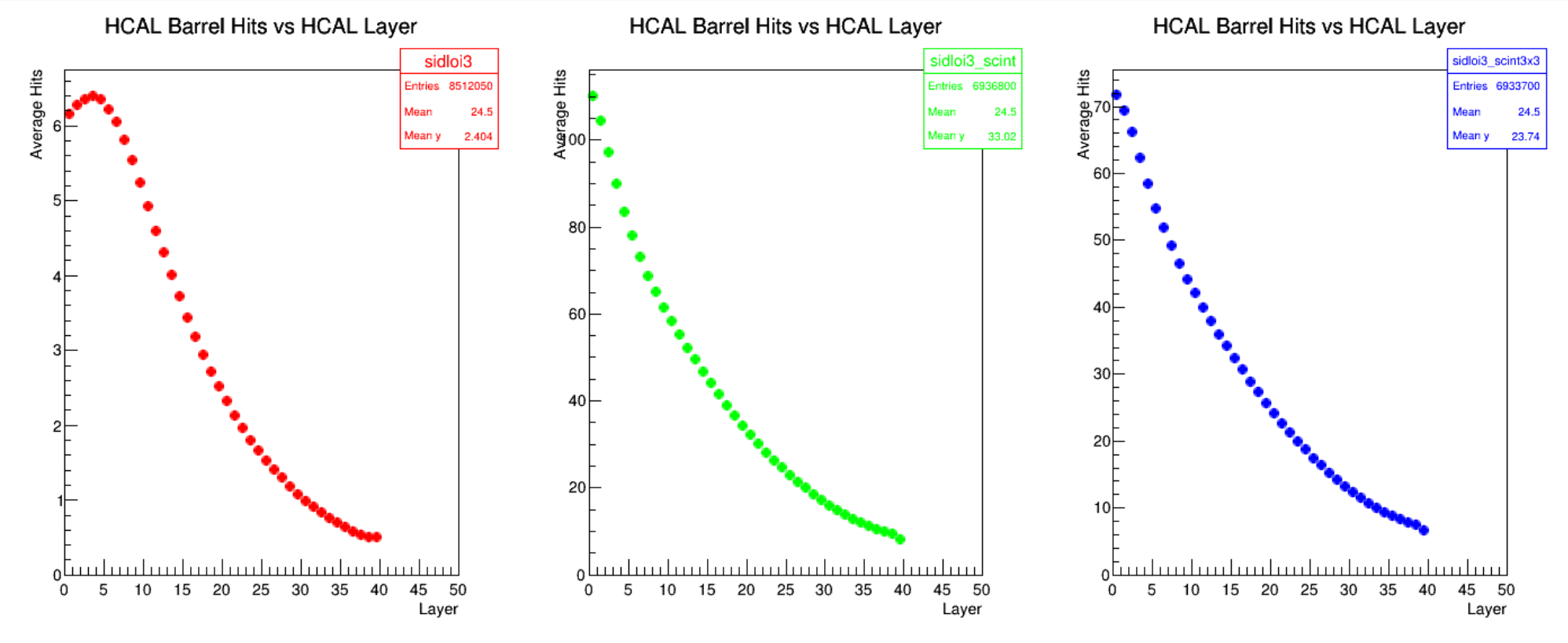
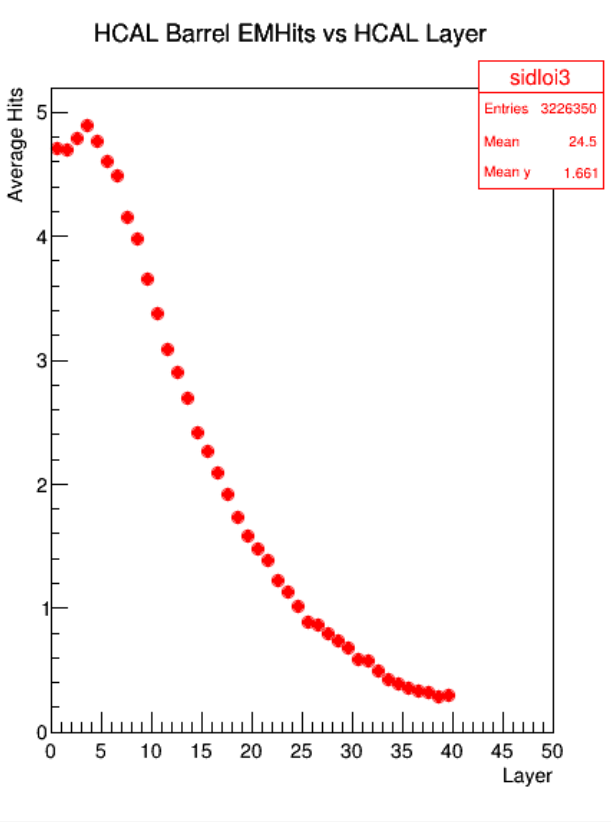
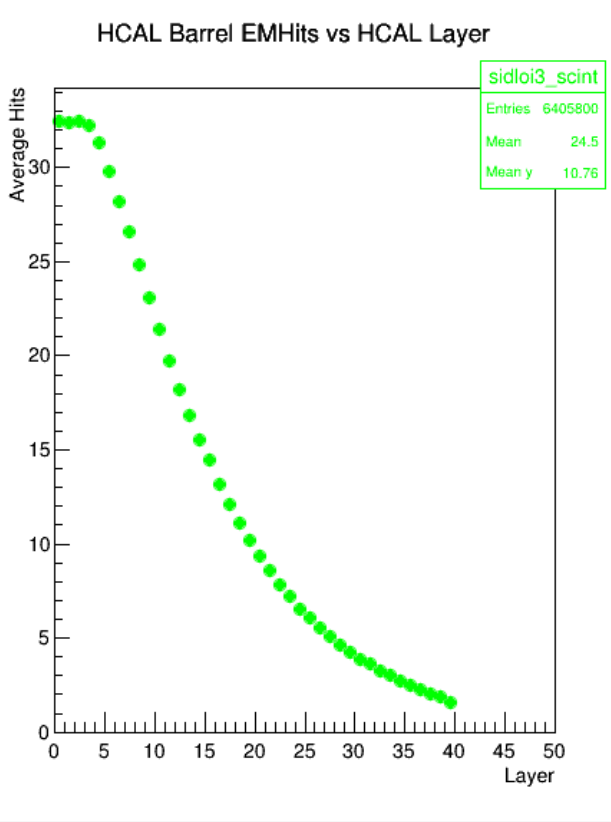
20 GeV Neutrons in the HCAL

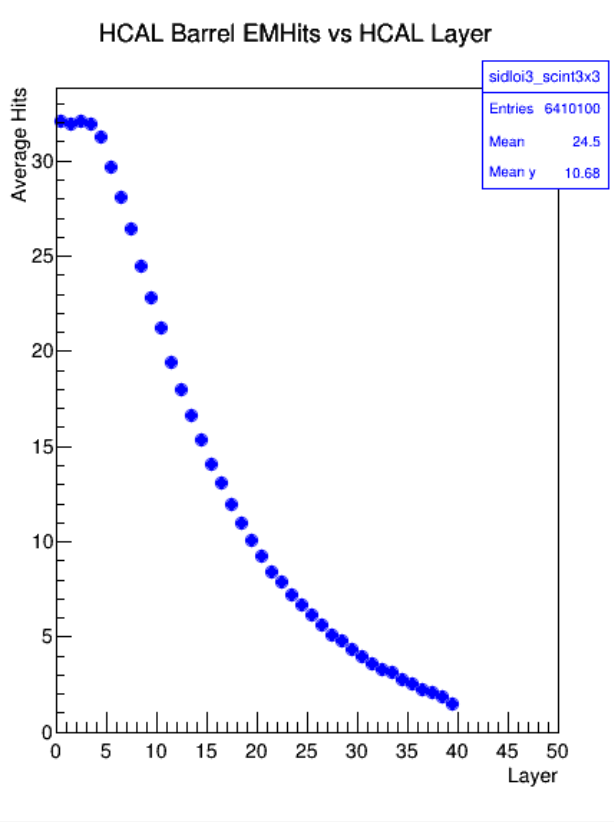


Clearly different

Shower composition EM hits

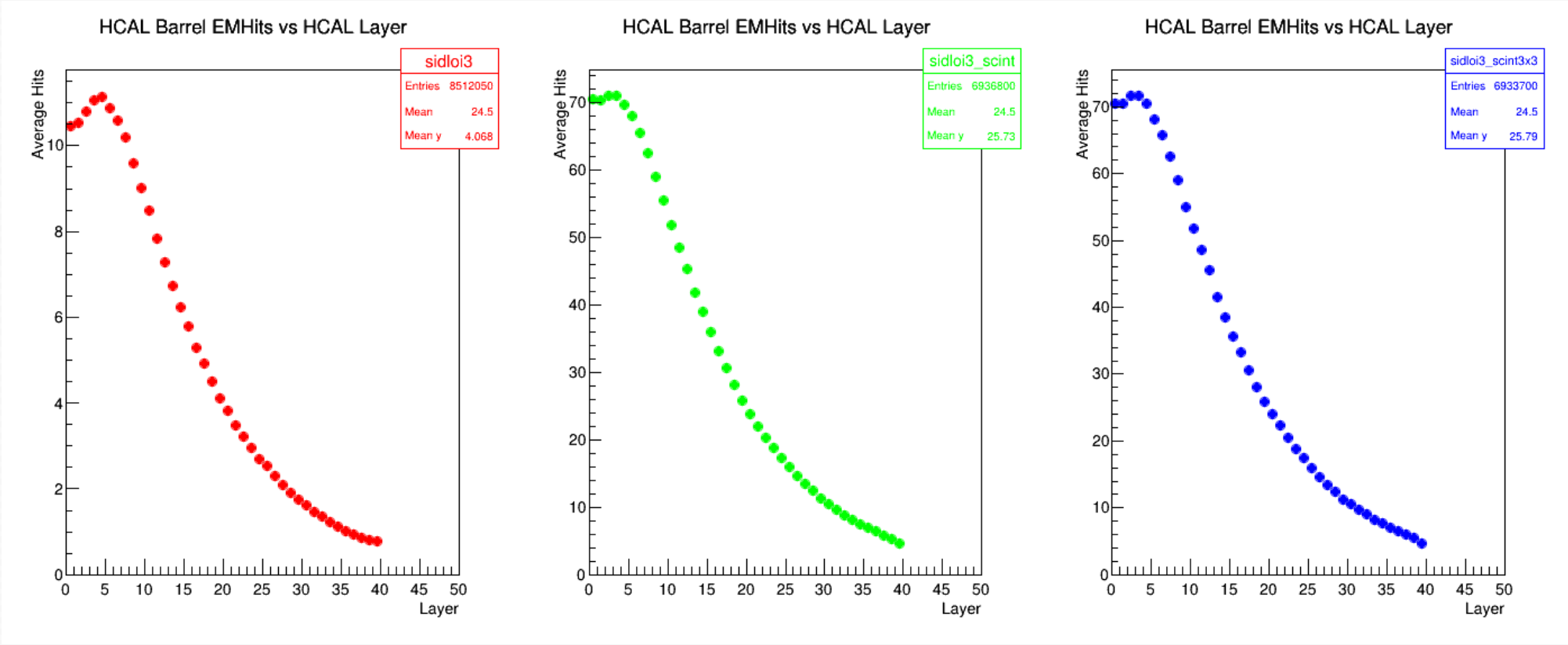






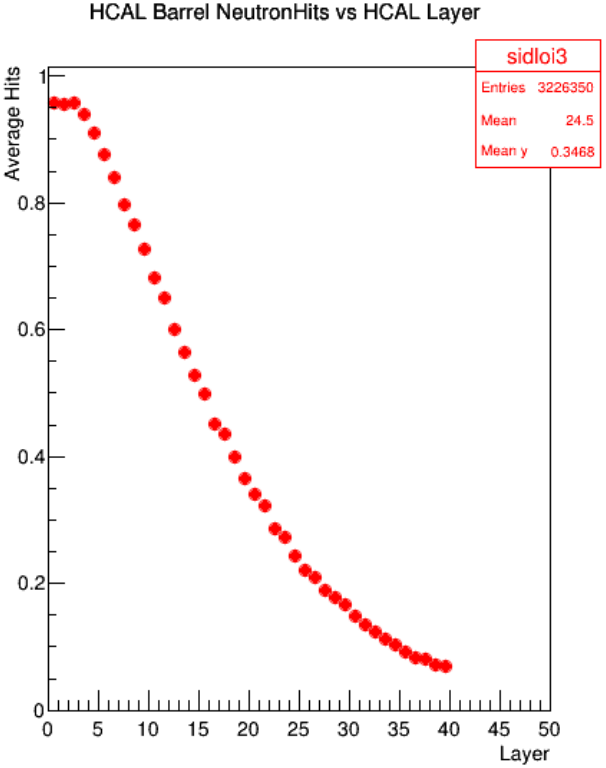
10 GeV Neutrons

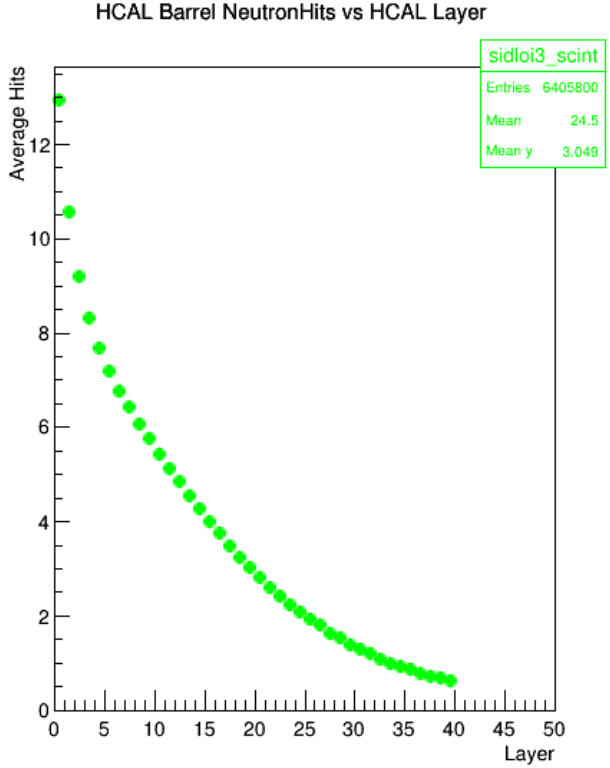
Cont'd

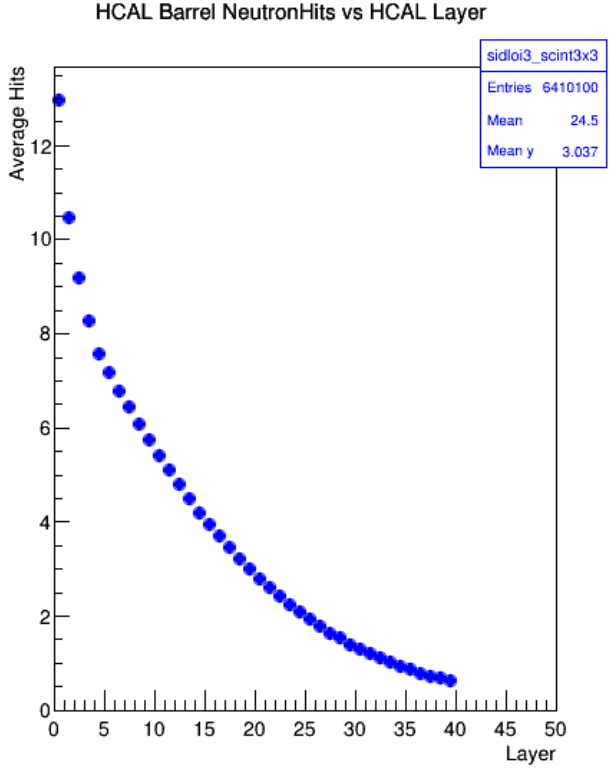


20 GeV Neutrons

Neutron component

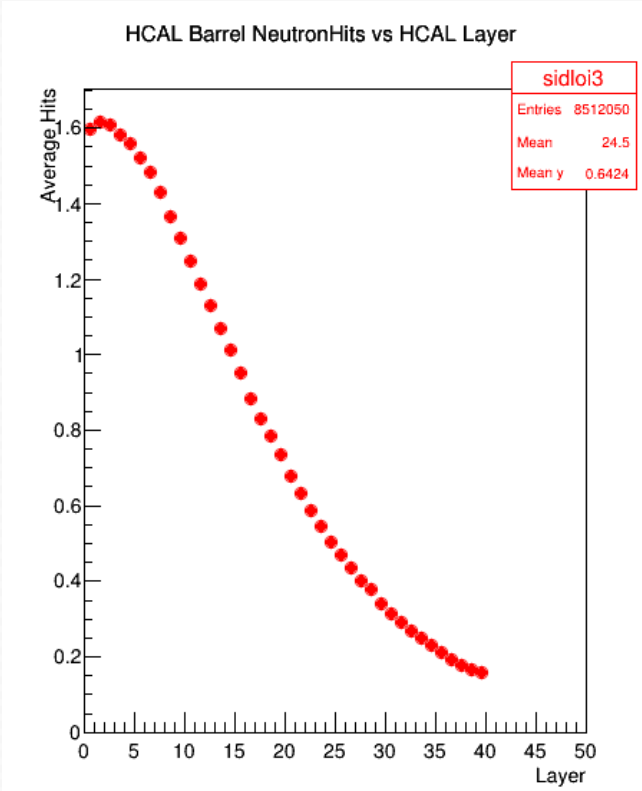


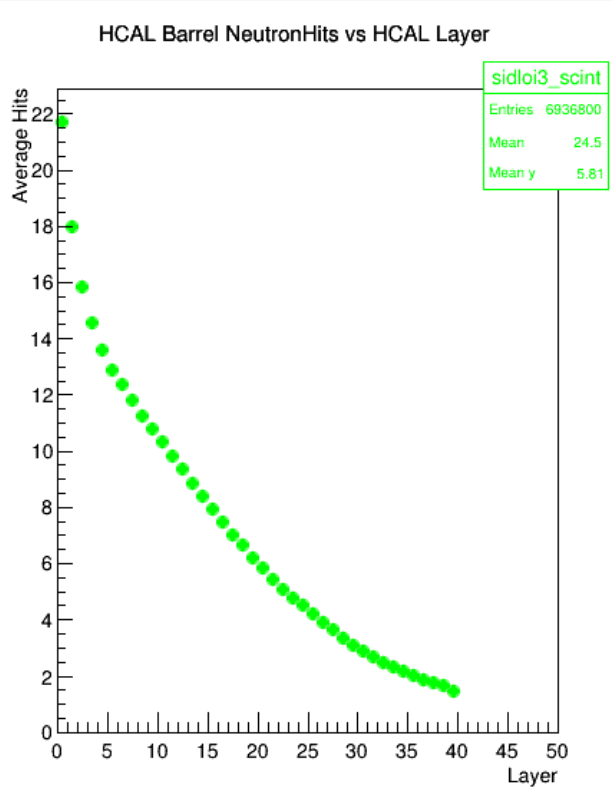


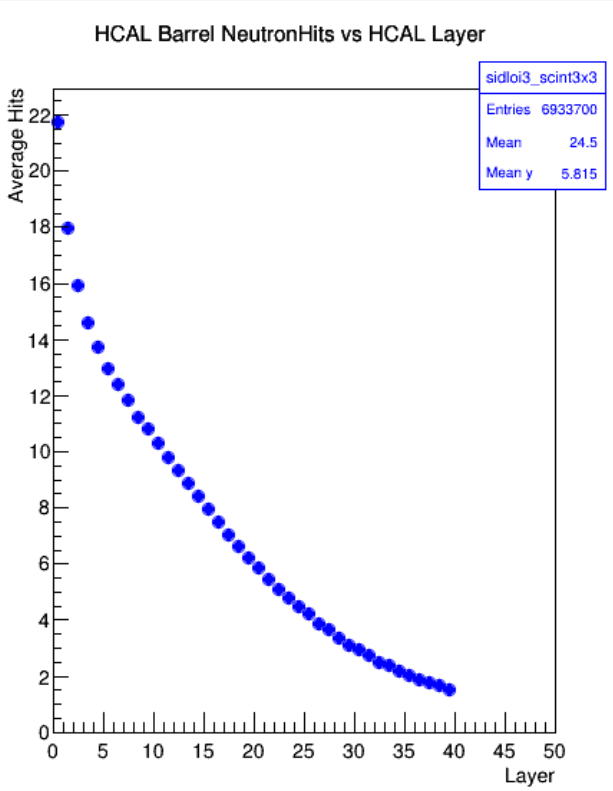


10 GeV Neutrons

Cont'd

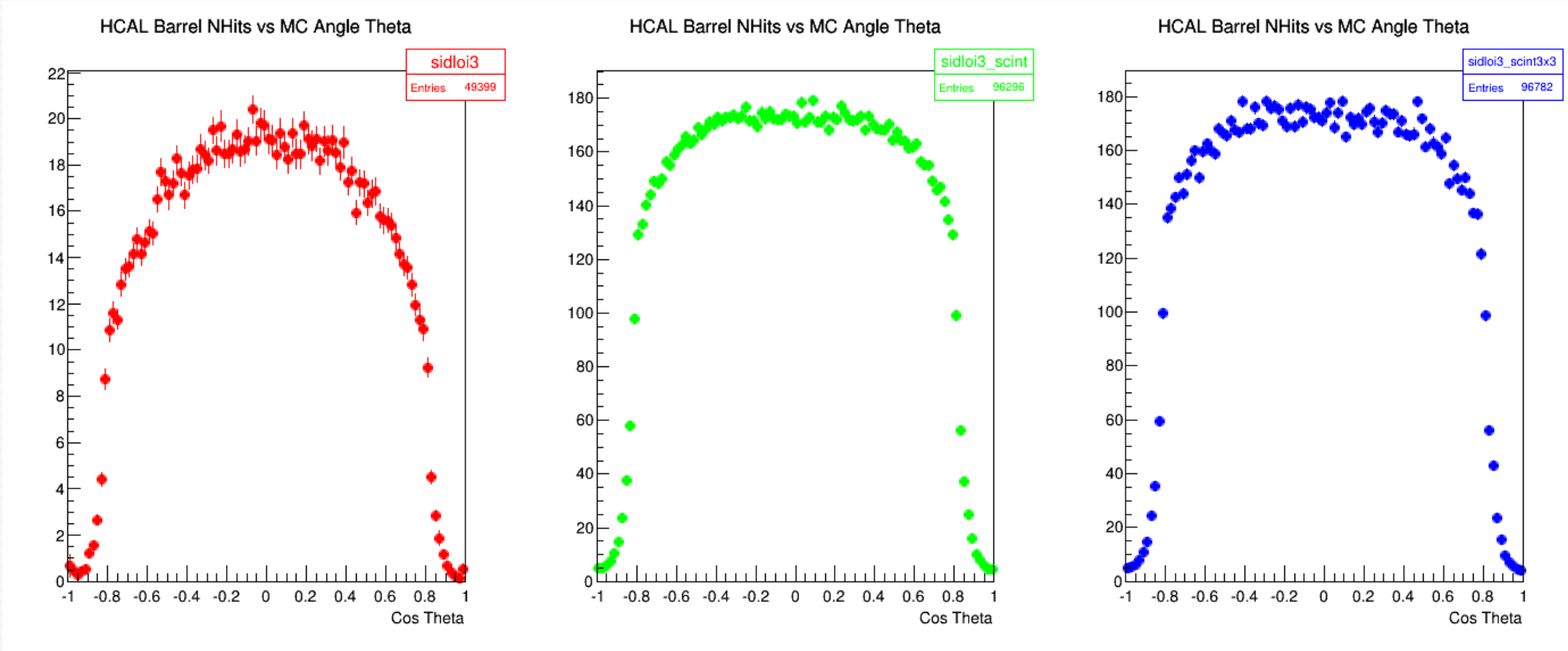






20 GeV Neutrons

Neutron Hits vs. Angle



10 GeV Neutrons

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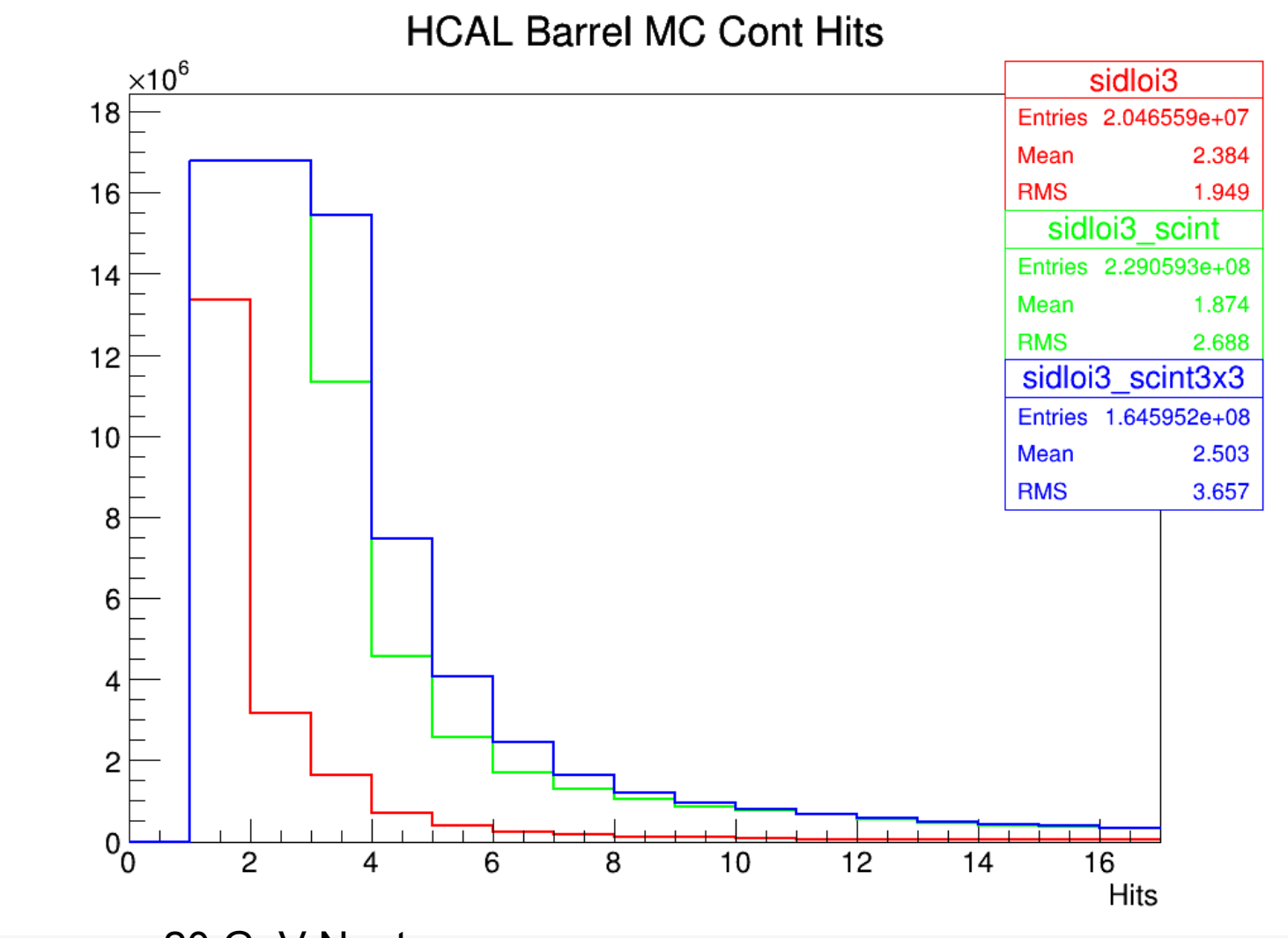
Hits per Cell



20 GeV Neutrons

Protons 20 GeV