sPHENIX TPC software meeting 12th January 2017

Sourav Tarafdar

Vanderbilt University

TPC layers size (60 layers vs 40 layers)

```
layer # :7 layer rad :30 layer thick :0.823333
layer # :8 layer rad :30.8333 layer thick :0.823333
layer # :9 layer rad :31.6667 layer thick :0.823333
layer # :10 layer rad :32.5 layer thick :0.823333
layer # :11 layer rad :33.3333 layer thick :0.823333
layer # :12 layer rad :34.1667 layer thick :0.823333
layer # :13 layer rad :35 layer thick :0.823333
layer # :14 layer rad :35.8333 layer thick :0.823333
layer # :15 layer rad :36.6667 layer thick :0.823333
layer # :16 layer rad :37.5 layer thick :0.823333
layer # :17 layer rad :38.3333 layer thick :0.823333
layer # :18 layer rad :39.1667 layer thick :0.823333
layer # :19 layer rad :40 layer thick :0.823333
layer # :20 layer rad :40.8333 layer thick :0.823333
layer # :21 layer rad :41.6667 layer thick :0.823333
layer # :22 layer rad :42.5 layer thick :0.823333
layer # :23 layer rad :43.3333 layer thick :0.823333
layer # :24 layer rad :44.1667 layer thick :0.823333
layer # :25 layer rad :45 layer thick :0.823333
layer # :26 layer rad :45.8333 layer thick :0.823333
layer # :27 layer rad :46.6667 layer thick :0.823333
layer # :28 layer rad :47.5 layer thick :0.823333
layer # :29 layer rad :48.3333 layer thick :0.823333
layer # :30 layer rad :49.1667 layer thick :0.823333
layer # :31 layer rad :50 layer thick :0.823333
layer # :32 layer rad :50.8333 layer thick :0.823333
layer # :33 layer rad :51.6667 layer thick :0.823333
layer # :34 layer rad :52.5 layer thick :0.823333
layer # :35 layer rad :53.3333 layer thick :0.823333
layer # :36 layer rad :54.1667 layer thick :0.823333
layer # :37 layer rad :55 layer thick :0.823333
layer # :38 layer rad :55.8333 layer thick :0.823333
layer # :39 layer rad :56.6667 layer thick :0.823333
layer # :40 layer rad :57.5 layer thick :0.823333
layer # :41 layer rad :58.3333 layer thick :0.823333
layer # :42 layer rad :59.1667 layer thick :0.823333
layer # :43 layer rad :60 layer thick :0.823333
layer # :44 layer rad :60.8333 layer thick :0.823333
layer # :45 layer rad :61.6667 layer thick :0.823333
layer # :46 layer rad :62.5 layer thick :0.823333
layer # :47 layer rad :63.3333 layer thick :0.823333
layer # :48 layer rad :64.1667 layer thick :0.823333
layer # :49 layer rad :65 layer thick :0.823333
layer # :50 layer rad :65.8333 layer thick :0.823333
layer # :51 layer rad :66.6667 layer thick :0.823333
layer # :52 layer rad :67.5 layer thick :0.823333
layer # :53 layer rad :68.3333 layer thick :0.823333
layer # :54 layer rad :69.1667 layer thick :0.823333
layer # :55 layer rad :70 layer thick :0.823333
layer # :56 layer rad :70.8333 layer thick :0.823333
layer # :57 layer rad :71.6667 layer thick :0.823333
layer # :58 layer rad :72.5 layer thick :0.823333
layer # :59 layer rad :73.3333 layer thick :0.823333
layer # :60 layer rad :74.1667 layer thick :0.823333
layer # :61 layer rad :75 layer thick :0.823333
layer # :62 layer rad :75.8333 layer thick :0.823333
layer # :63 layer rad :76.6667 layer thick :0.823333
layer # :64 layer rad :77.5 layer thick :0.823333
layer # :65 layer rad :78.3333 layer thick :0.823333
layer # :66 layer rad :79.1667 layer thick :0.823333
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```

```
Fun4AllServer::setRun(): could not get timestamp for run  0,
layer # :0 layer rad :2.3 layer thick :0.005
layer # :1 layer rad :3.2 layer thick :0.005
layer # :2 layer rad :3.9 layer thick :0.005
layer # :3 layer rad :6 layer thick :0.012
layer # :4 layer rad :8 layer thick :0.012
layer # :5 layer rad :10 layer thick :0.012
layer # :6 layer rad :12 layer thick :0.012
layer # :7 layer rad :30 layer thick :1.24
layer # :8 layer rad :31.25 layer thick :1.24
layer # :9 layer rad :32.5 layer thick :1.24
layer # :10 layer rad :33.75 layer thick :1.24
layer # :11 layer rad :35 layer thick :1.24
layer # :12 layer rad :36.25 layer thick :1.24
layer # :13 layer rad :37.5 layer thick :1.24
layer # :14 layer rad :38.75 layer thick :1.24
layer # :15 layer rad :40 layer thick :1.24
layer # :16 layer rad :41.25 layer thick :1.24
layer # :17 layer rad :42.5 layer thick :1.24
layer # :18 layer rad :43.75 layer thick :1.24
layer # :19 layer rad :45 layer thick :1.24
layer # :20 layer rad :46.25 layer thick :1.24
layer # :21 layer rad :47.5 layer thick :1.24
layer # :22 layer rad :48.75 layer thick :1.24
layer # :23 layer rad :50 layer thick :1.24
layer # :24 layer rad :51.25 layer thick :1.24
layer # :25 layer rad :52.5 layer thick :1.24
layer # :26 layer rad :53.75 layer thick :1.24
layer # :27 layer rad :55 layer thick :1.24
layer # :28 layer rad :56.25 layer thick :1.24
layer # :29 layer rad :57.5 layer thick :1.24
layer # :30 layer rad :58.75 layer thick :1.24
layer # :31 layer rad :60 layer thick :1.24
layer # :32 layer rad :61.25 layer thick :1.24
layer # :33 layer rad :62.5 layer thick :1.24
layer # :34 layer rad :63.75 layer thick :1.24
layer # :35 layer rad :65 layer thick :1.24
layer # :36 layer rad :66.25 layer thick :1.24
layer # :37 layer rad :67.5 layer thick :1.24
layer # :38 layer rad :68.75 layer thick :1.24
layer # :39 layer rad :70 layer thick :1.24
layer # :40 layer rad :71.25 layer thick :1.24
layer # :41 layer rad :72.5 layer thick :1.24
layer # :42 layer rad :73.75 layer thick :1.24
layer # :43 layer rad :75 layer thick :1.24
layer # :44 layer rad :76.25 layer thick :1.24
layer # :45 layer rad :77.5 layer thick :1.24
layer # :46 layer rad :78.75 layer thick :1.24
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List of Nodes in Fun4AllServer:
```
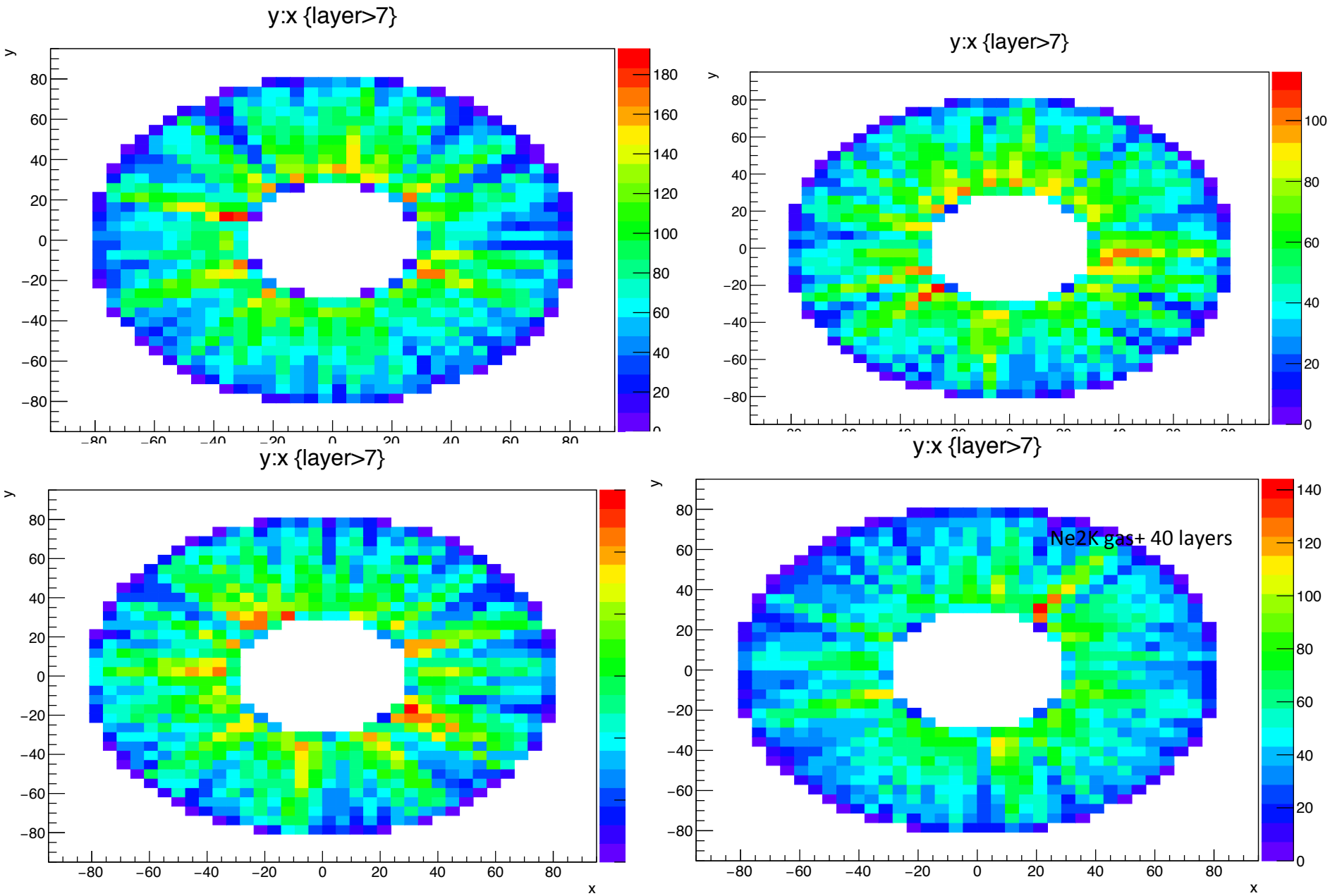
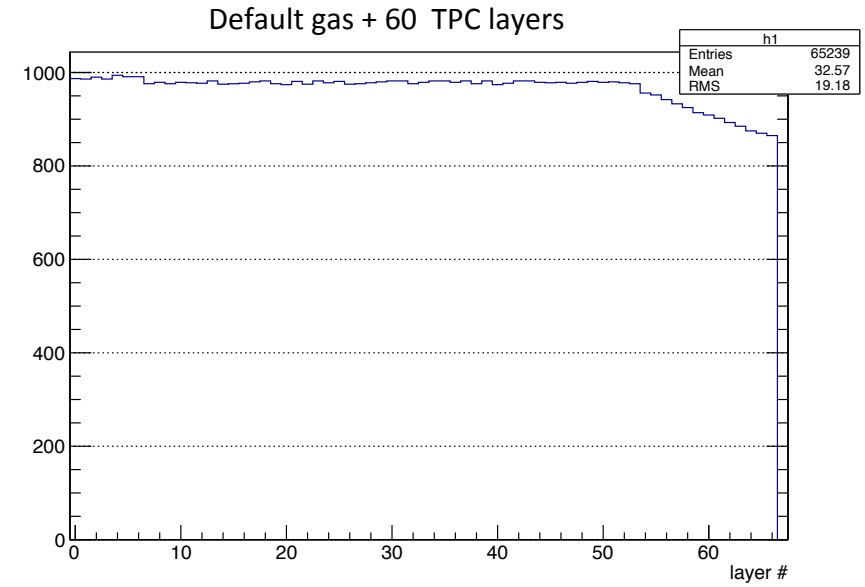

TPC layers

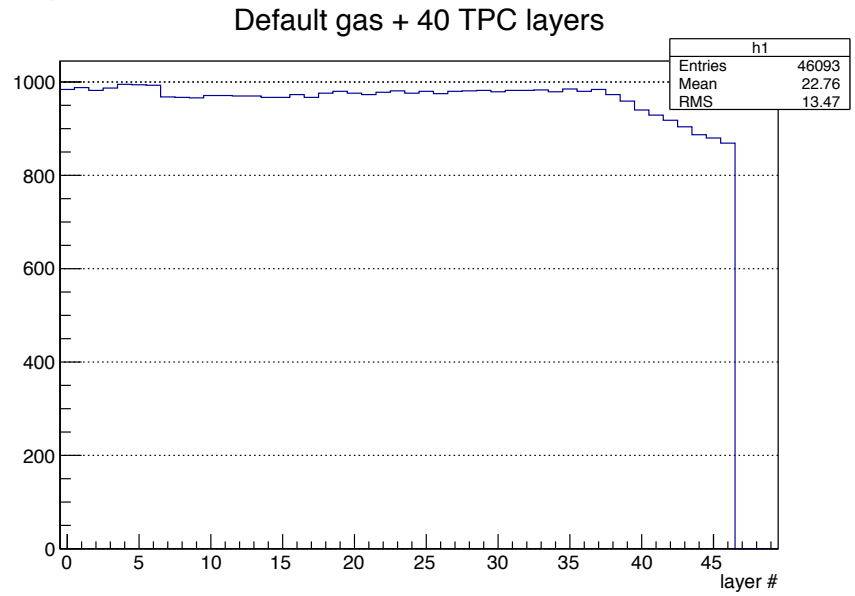
G4 hit distributions (60 layers vs 40 layers) from "ntp_g4hit" evaluator ntuple for different gas

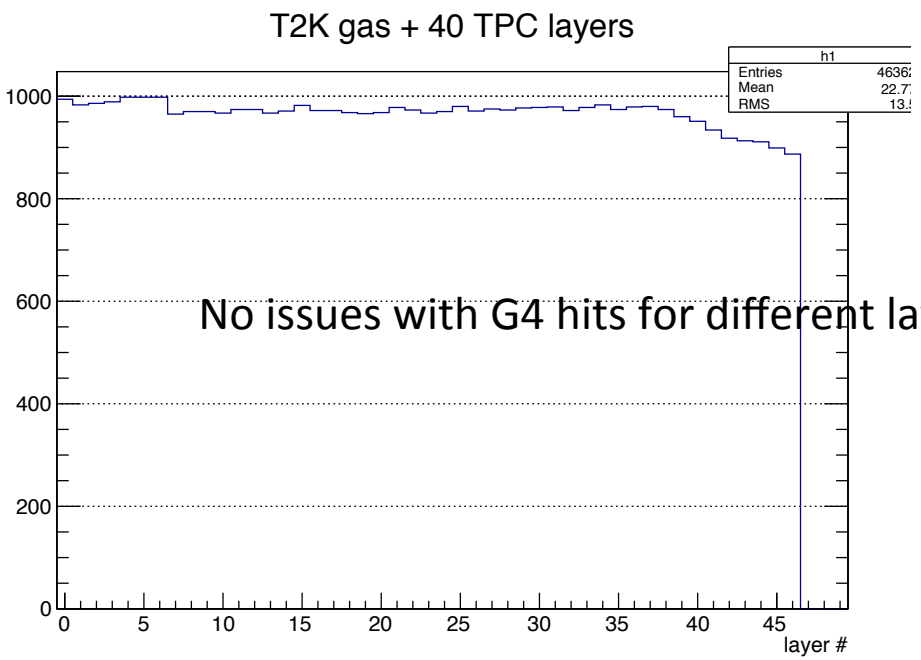


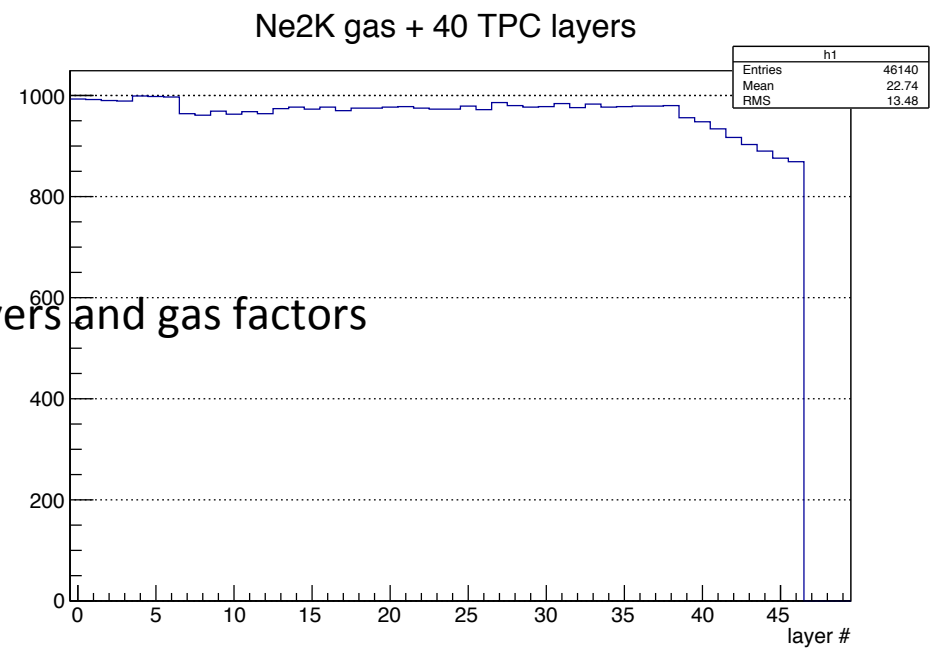
No issues with G4 hits for different layers and gas factors

G4 hit distributions (60 layers vs 40 layers) from “ntp_g4hit” evaluator ntuple



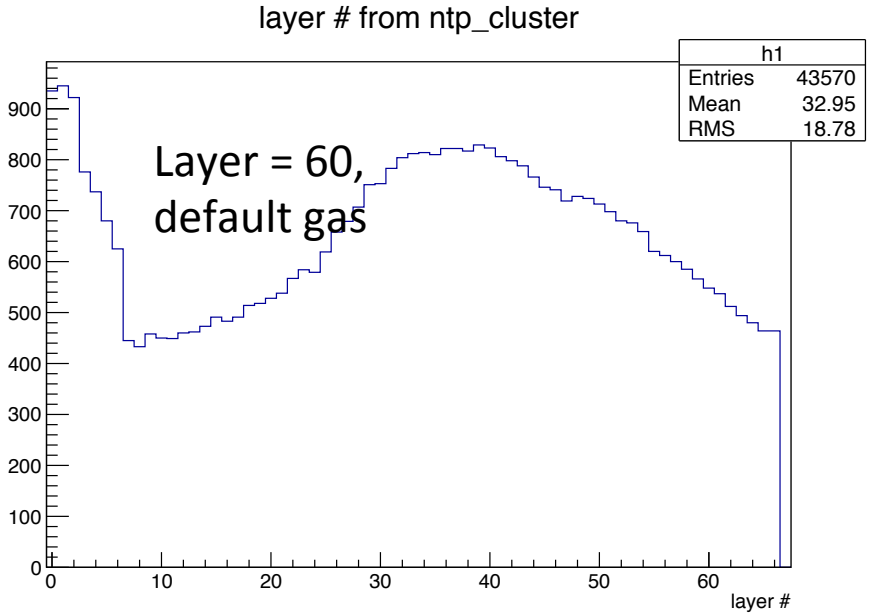


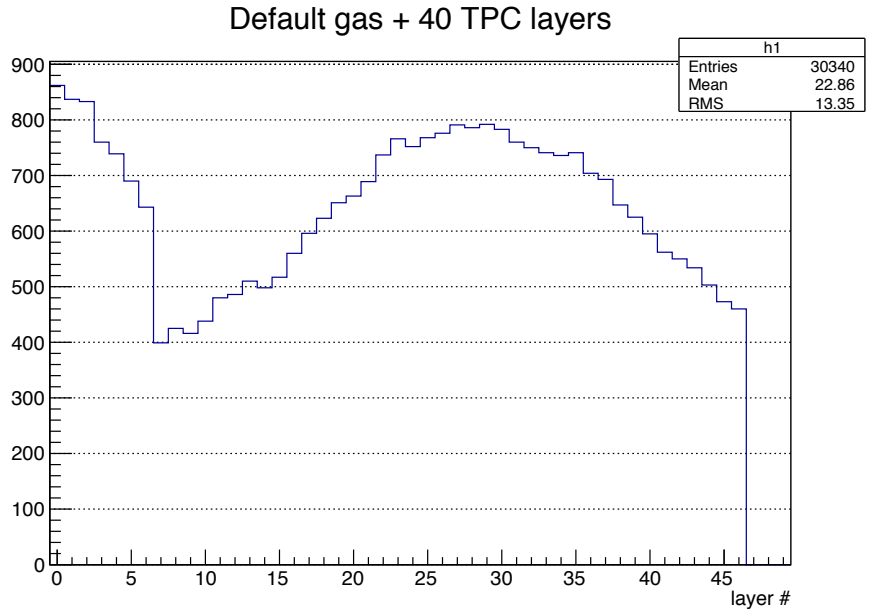


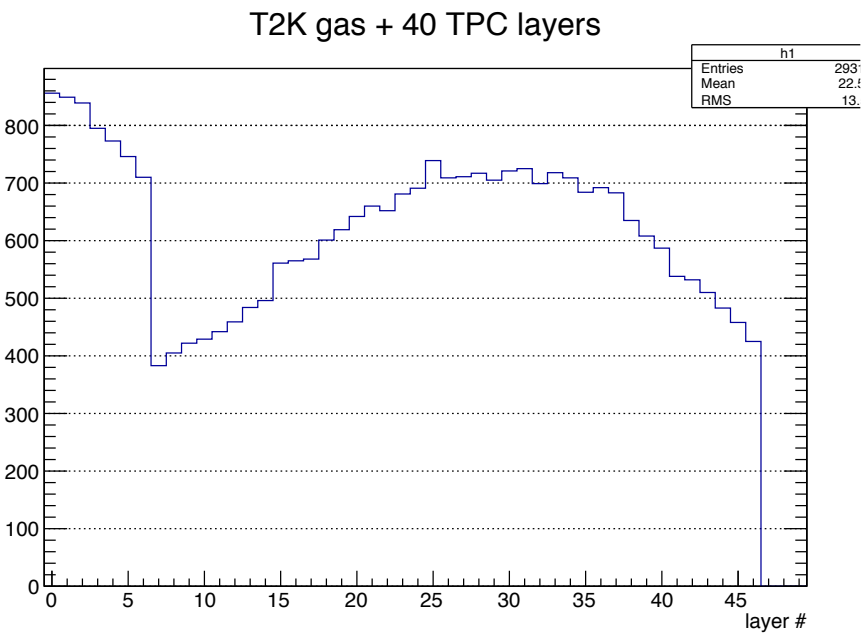


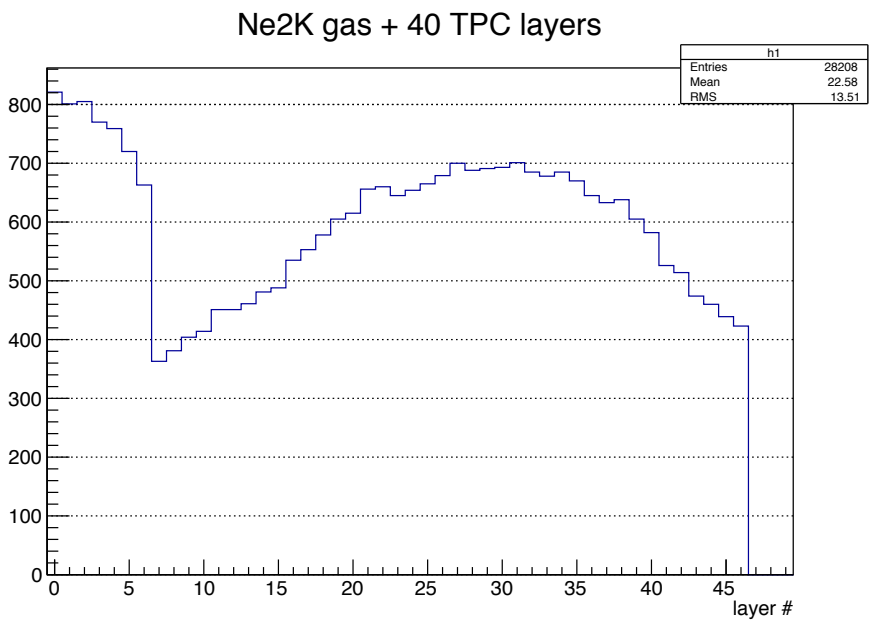
No issues with G4 hits for different layers and gas factors

Cluster distributions (60 layers vs 40 layers) from “ntp_cluster” evaluator ntuple for different gas



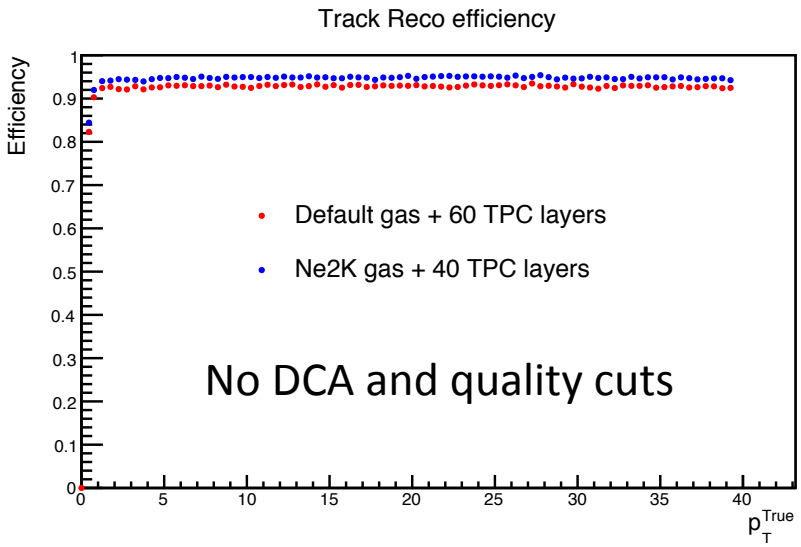


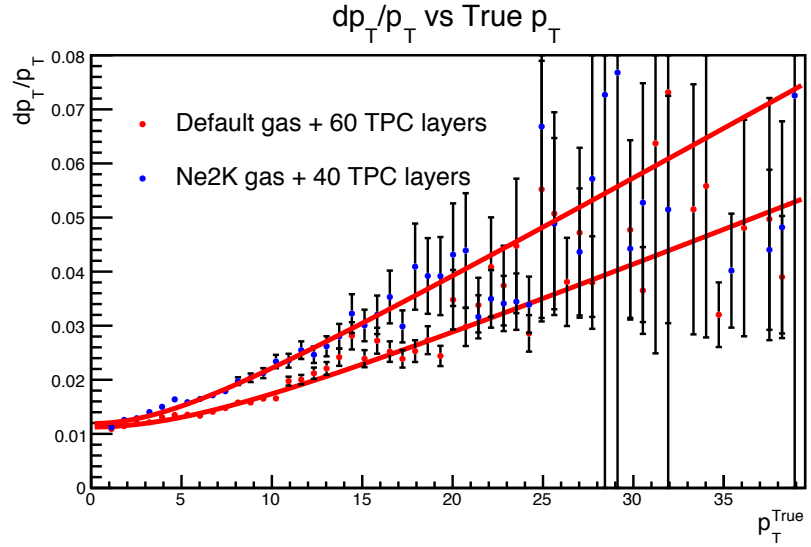


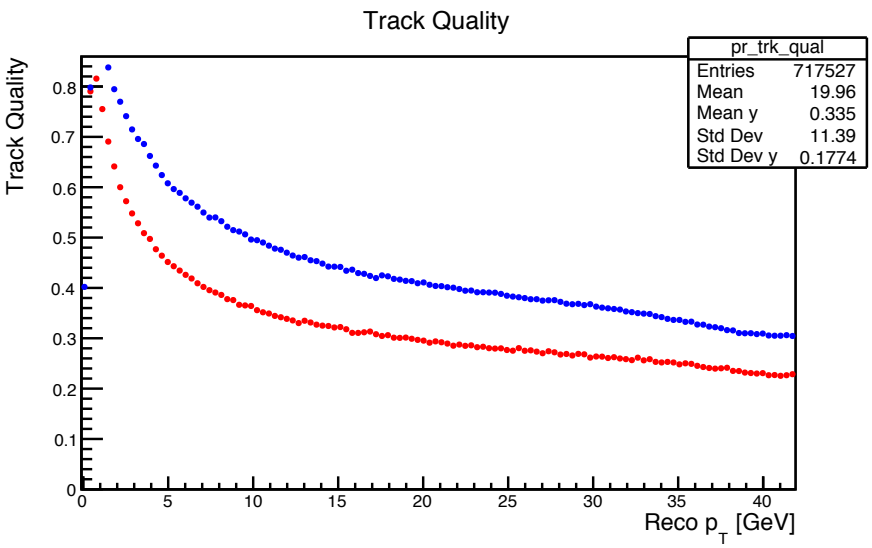


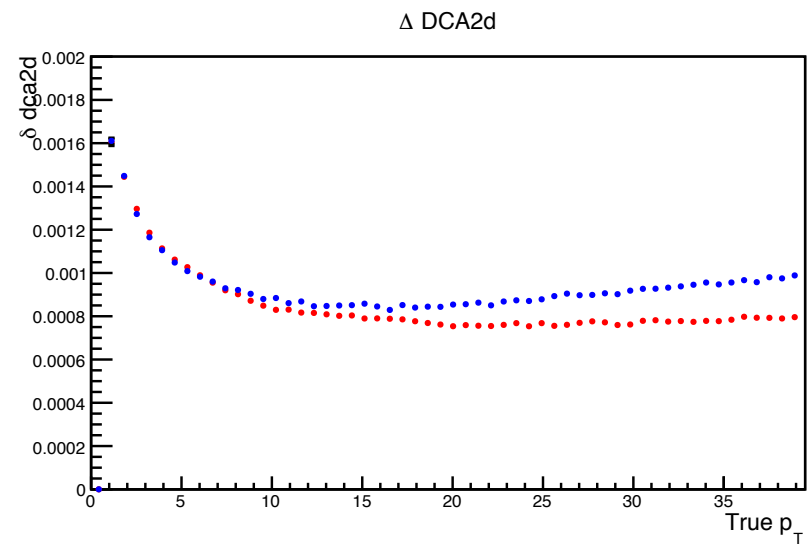
Tracking performance (MAPS (3)+ ITT(4) + TPC(60 vs 40) for different gas parameters

500 pure pions



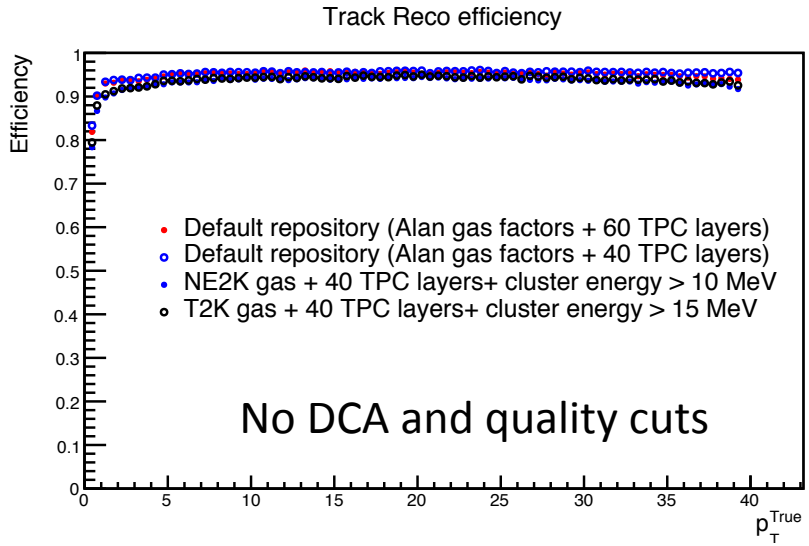


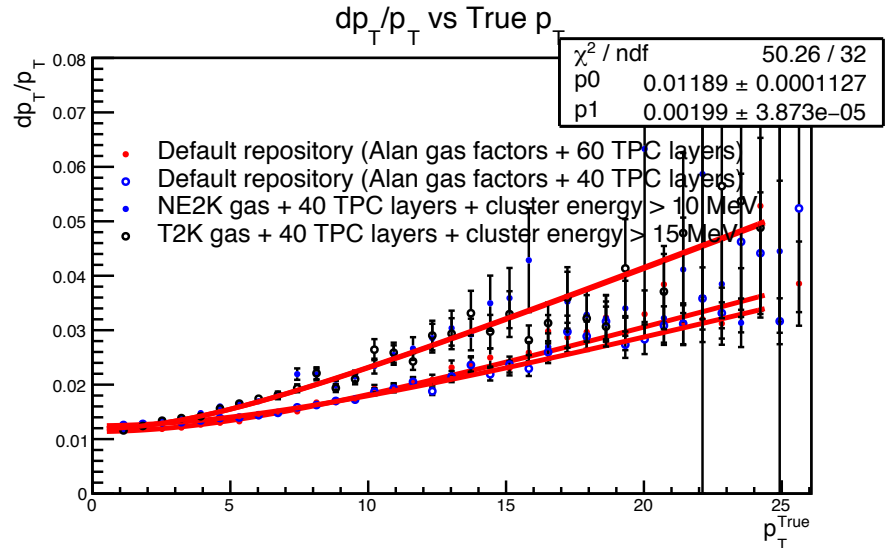


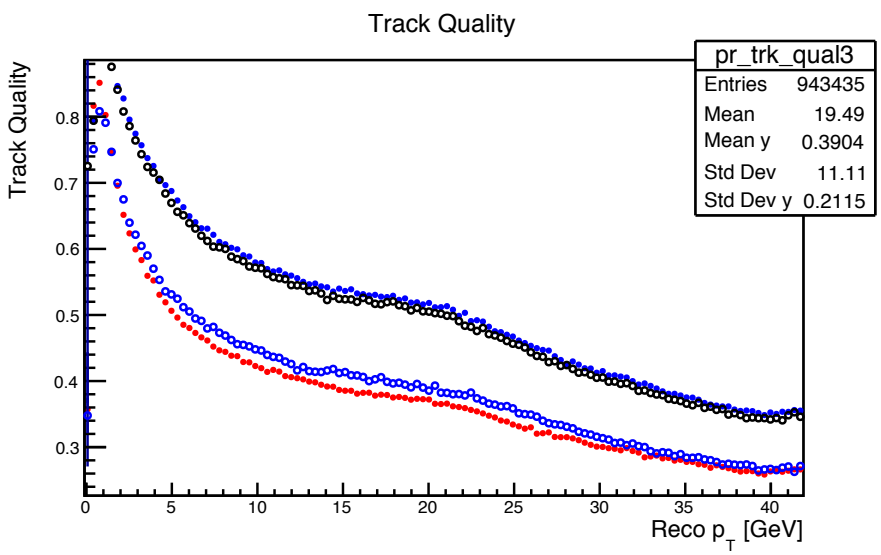


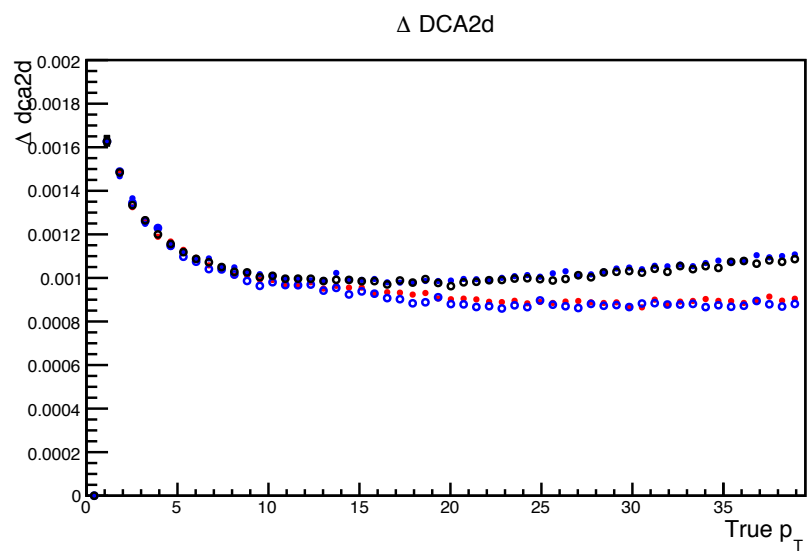
Tracking performance (MAPS (3)+ ITT(4) + TPC(60 vs 40) for different gas parameters

500 pions embedded in most central hijing









QM2017 poster

- sPHENIX detector overview
- Tracker motivation (includes some Physics related plots)
- sPHENIX tracker detectors (MAPS + ITT + TPC)
- Performance plots (efficiency + pT resolution + upsilon plots)
- Conclusions