sPHENIX TPC software meeting
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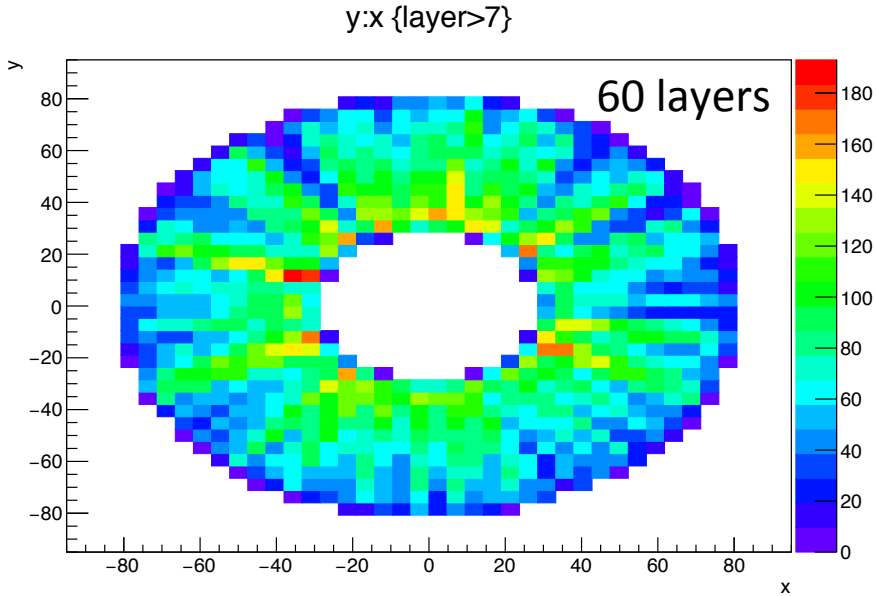
Reducing number of TPC gas layers from 60 to 30

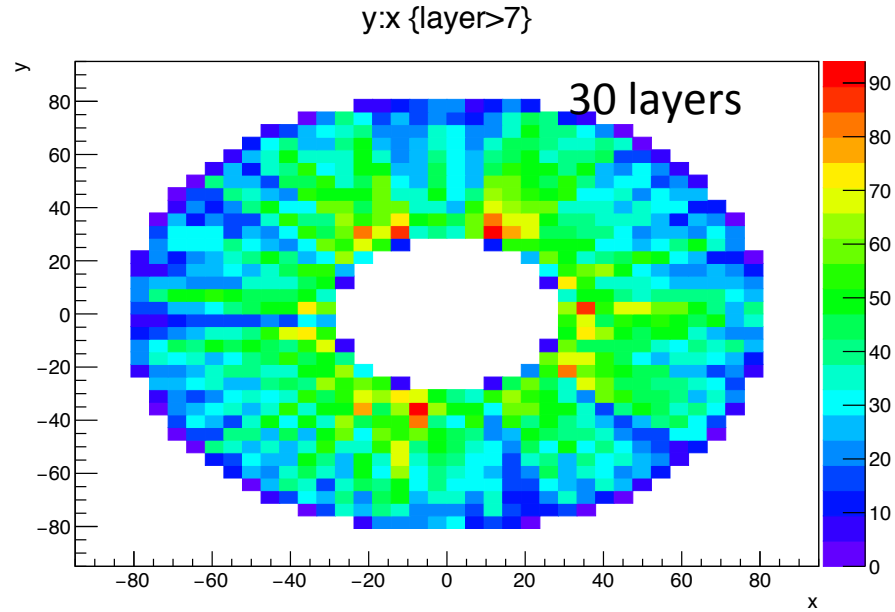
- Initially tried with changing the number only in Macro. Concern was whether it keeps the voxel size same or not. It doesn't so not the right way of changing the gas layer.
- Needed to do it in TPC G4 code itself.

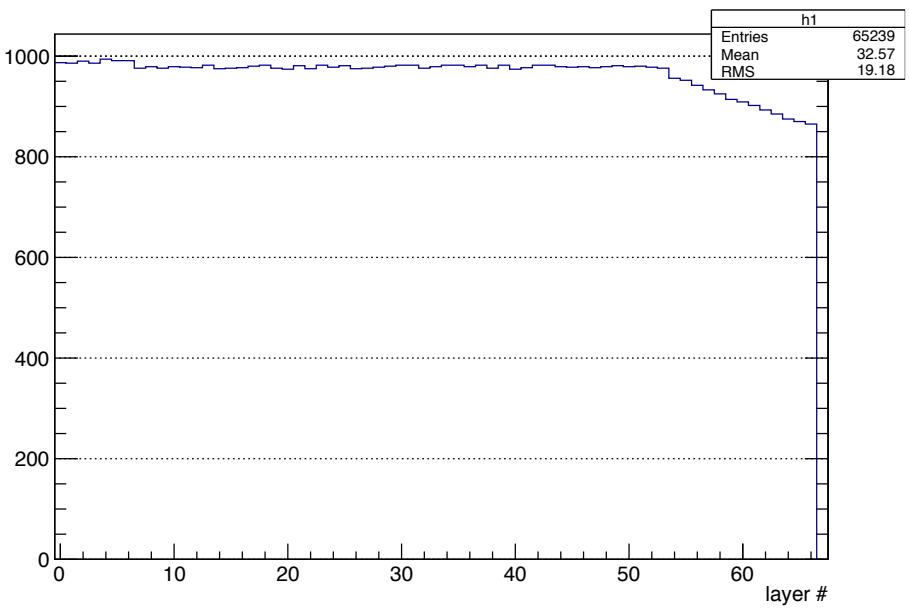
```
map<int, std::pair <double, double> >::iterator sizeiter;
PHG4HitContainer::LayerIter layer;
pair<PHG4HitContainer::LayerIter, PHG4HitContainer::LayerIter> layer_begin_end = g4hit->getLayers();
int count1 = 0 ;
int count2 = 0 ;
for(layer = layer_begin_end.first; layer != layer_begin_end.second; layer++)
//for(layer < layer_begin_end.first; layer != layer_begin_end.second; layer++)
  {
    count1++;
    if (count1 > 7 && count1 %2 == 0) continue;
    count2++;
    std::map<std::string, PHG4CylinderCell*> cellptmap;
    PHG4HitContainer::ConstIterator hiter;
    PHG4HitContainer::ConstRange hit_begin_end = g4hit->getHits(*layer);
    PHG4CylinderCellGeom *geo = seggeo->GetLayerCellGeom(*layer);
```

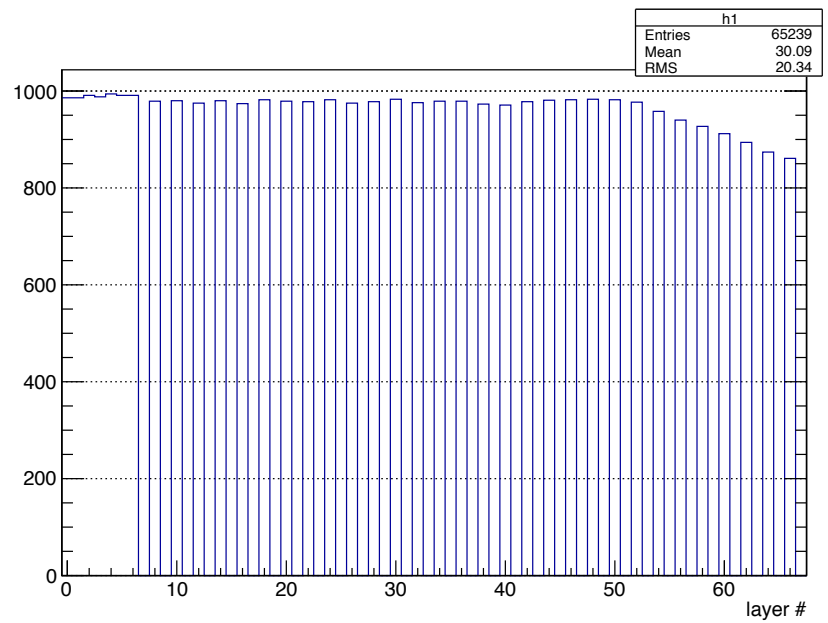
Added a counter and start skipping every alternate layers of TPC gas

G4 hit distributions (30 layers vs 60 layers) from “ntp_g4hit” evaluator ntuple



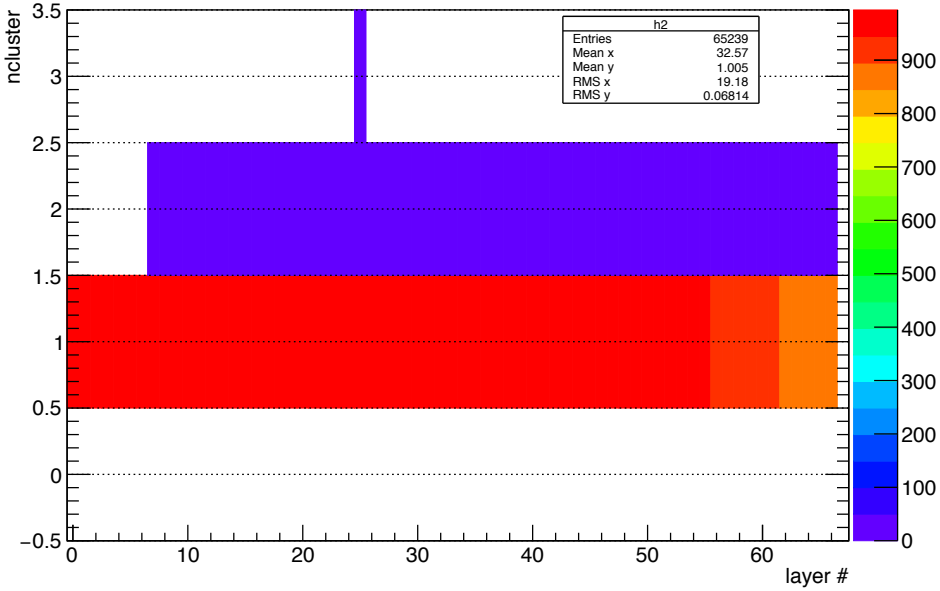




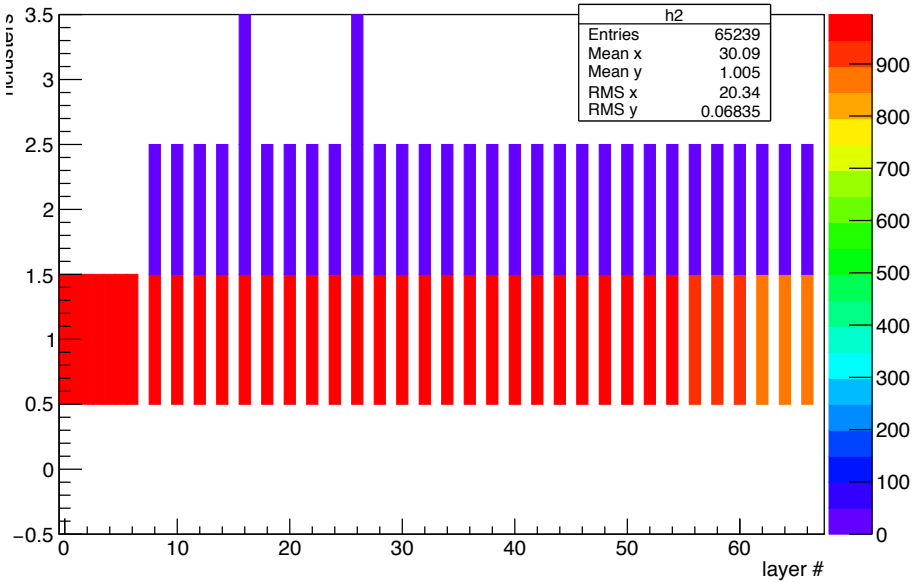


G4 hit distributions (30 layers vs 60 layers) from “ntp_g4hit” evaluator ntuple

60 layers

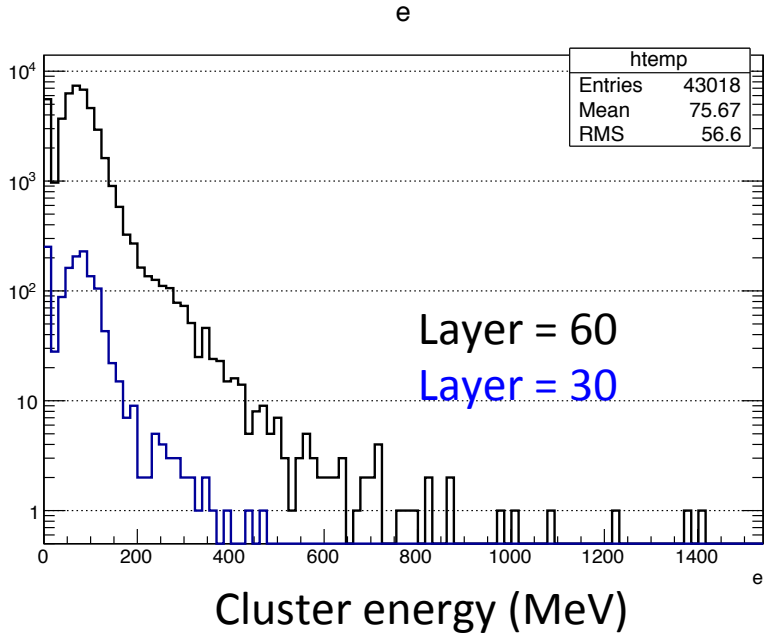


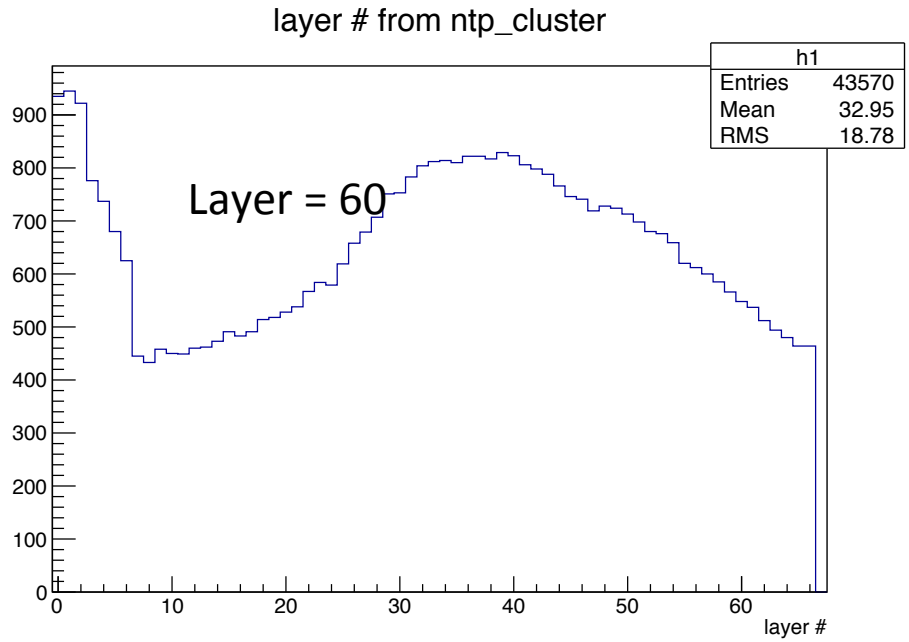
30 layers

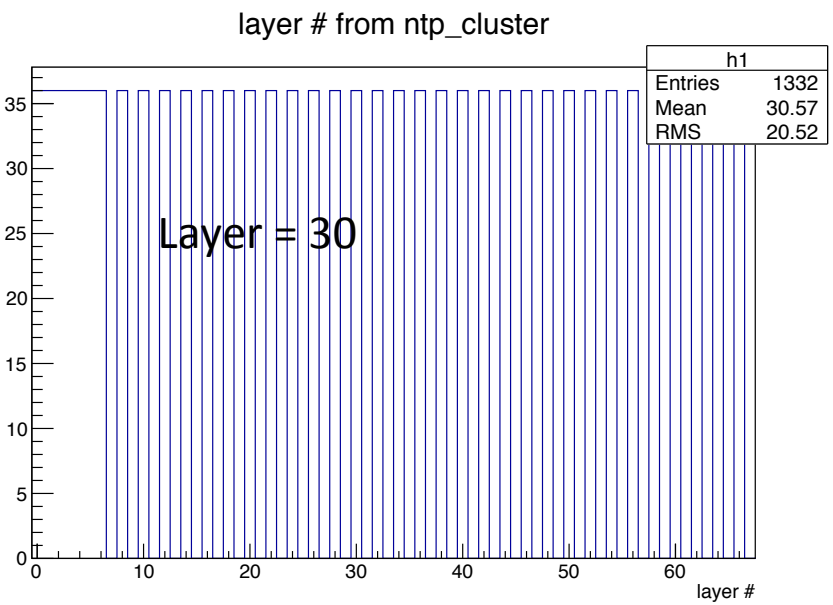


- G4 hit distribution from 30 layers TPC seems to have no issues in slide #1.
- Not sure why ncluster has values of 2 and 3, nevertheless both these distributions are more or less compatible

Cluster distributions (30 layers vs 60 layers) from “ntp_cluster” evaluator ntuple







- Cluster layer distributions are quite different for TPC layer 30 and 60 (right and bottom plot).
- Cluster ntuple entries for 30 layers is far too low as compared to that with 60 layers of TPC.

- Tried with just one pion as well. While the G4 hit distributions looks not so problematic the cluster ntuple gets 0 entries