Pt Reconstruction

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On the last session

- I wrote some files to run a lot of information.

- My first train didn't work. So, I rewrite the whole train.

- Get the histograms of transverse momentum.

Running in the Offline Cluster

We need to make different changes in the initial idea. Then, we made different folders, where each one runs a list with 1111 lines with 500 events each. Finally, we combine all the exits

```sh
#!/bin/sh

for ((INDEX = 0; INDEX < 20; INDEX++))
do
sed -e "s/RunAnalyses/RunAnalyses${INDEX}/;   s/list/listareq28_${INDEX}/;
  s/pCentry/pCentry${INDEX}/;     s/taskNucleiy/taskNucleiy${INDEX}/" RunAnn
alyses.C > RunAnalyses${INDEX}.C
done

~
```

Once this worked, I wrote a report on how to do this.

Explaining every detail to consider and some possible error that may present itself.
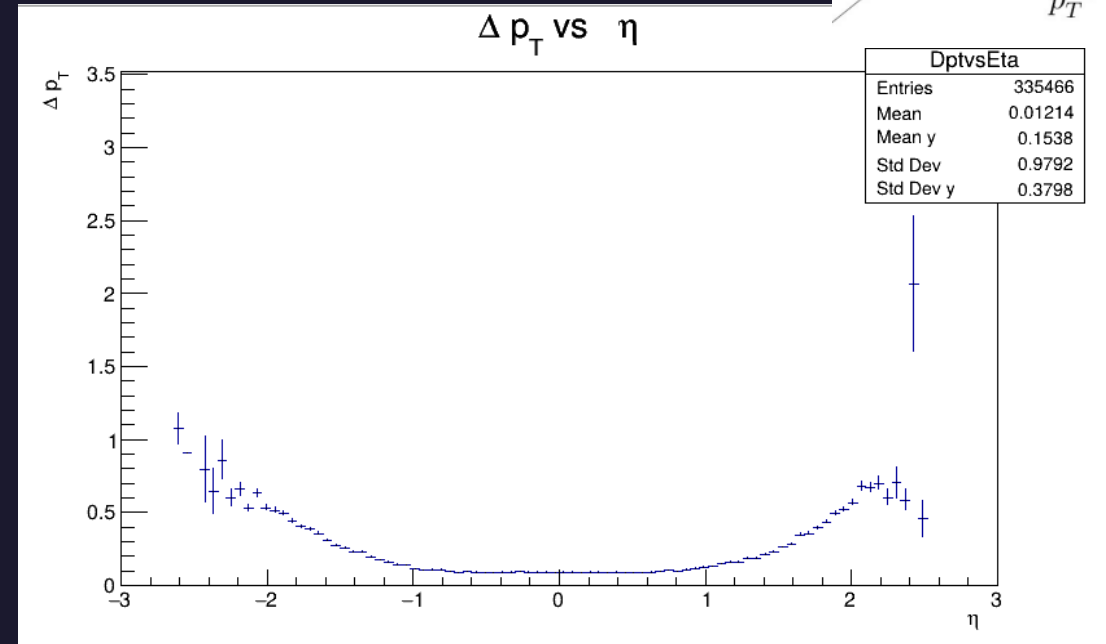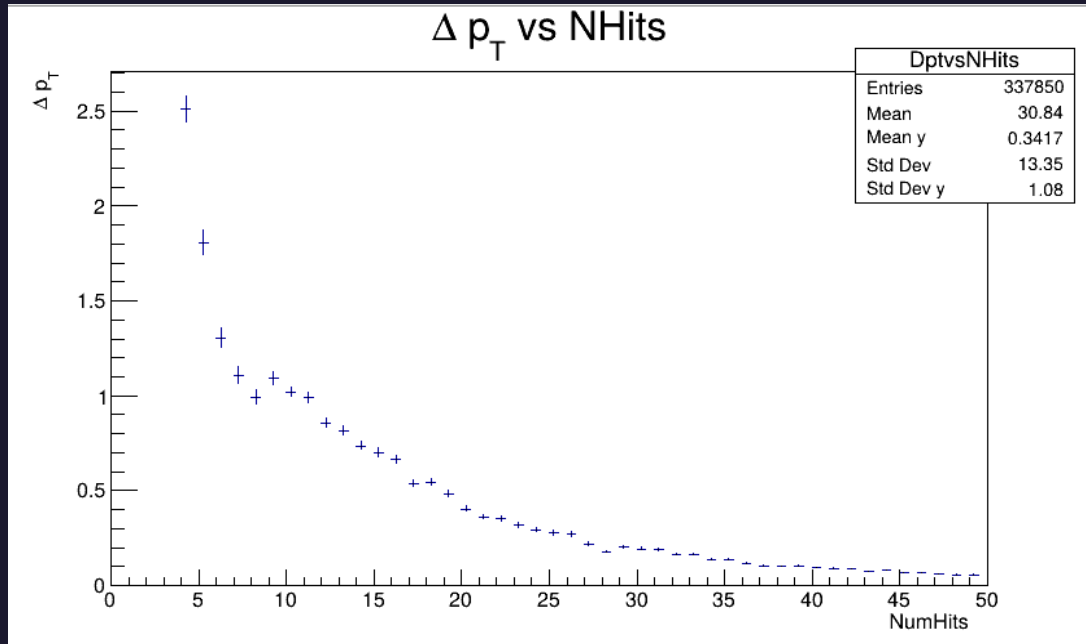
Train is working

I rewrote the whole train, checking that everything is working fine. Then I started to modify to obtain histograms. At the moment, I only analyses 1500 events. Using URQMD information with reduced magnetic field. The value of the magnetic field is B = 2kG

```
 -I- Using the default constant magnetic field Bz = 5 kG
 -I- The magnetic field at (0,0,0) = (0,0,5) kG
MpdAnalysisManager: number of events to process 1500
MpdAnalysisManager: processing event 0 of 1500
MpdAnalysisManager: processing event 100 of 1500
MpdAnalysisManager: processing event 200 of 1500
MpdAnalysisManager: processing event 300 of 1500
MpdAnalysisManager: processing event 400 of 1500
MpdAnalysisManager: processing event 500 of 1500
MpdAnalysisManager: processing event 600 of 1500
MpdAnalysisManager: processing event 700 of 1500
MpdAnalysisManager: processing event 800 of 1500
MpdAnalysisManager: processing event 900 of 1500
MpdAnalysisManager: processing event 1000 of 1500
MpdAnalysisManager: processing event 1100 of 1500
MpdAnalysisManager: processing event 1200 of 1500
MpdAnalysisManager: processing event 1300 of 1500
MpdAnalysisManager: processing event 1400 of 1500
Writing output to file pCentr.root
Writing output to file taskEner.root
root [1] .q
```

Histograms of ΔPt witout cuts

"ΔPt vs NoHits" & "ΔPt vs η" without cuts
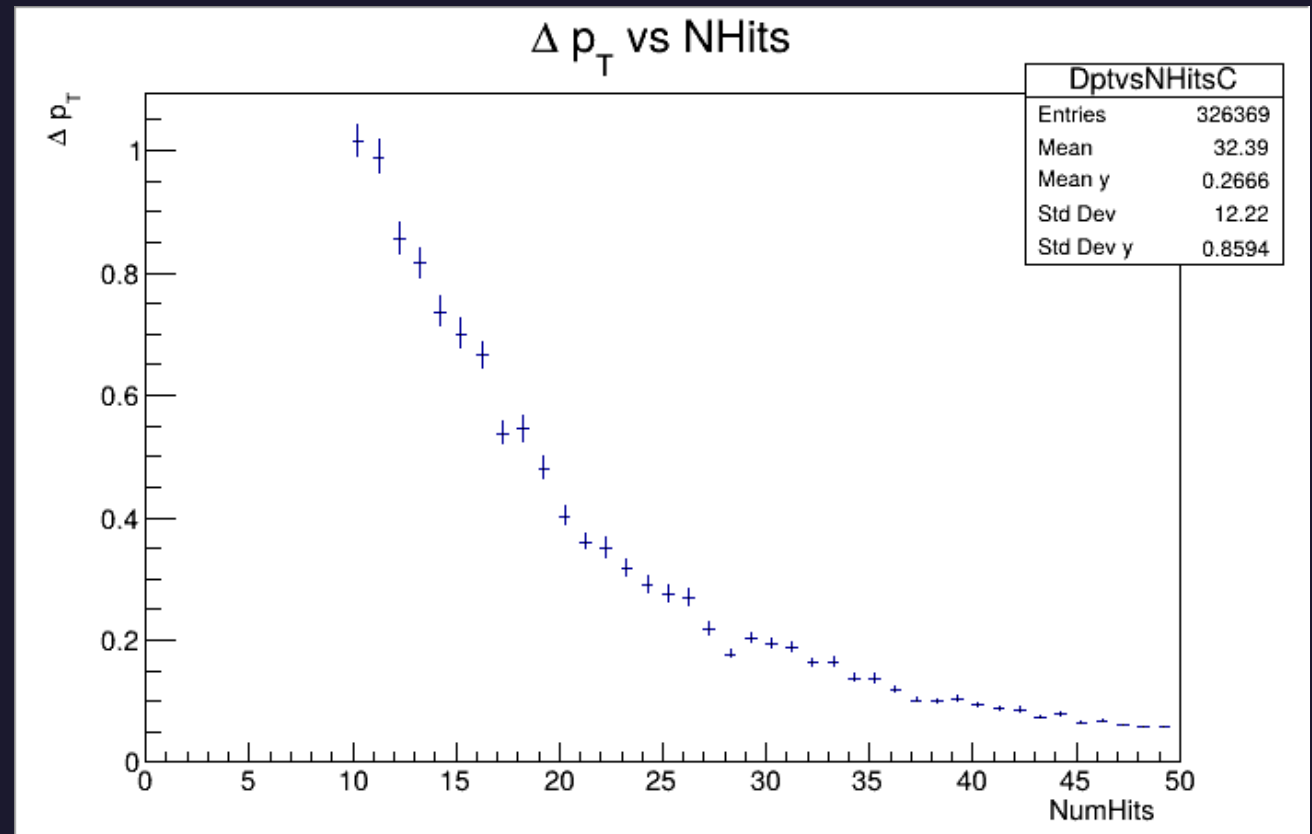
Histograms of ΔPt with cuts

I make a cut in the Number of Hits in 10.
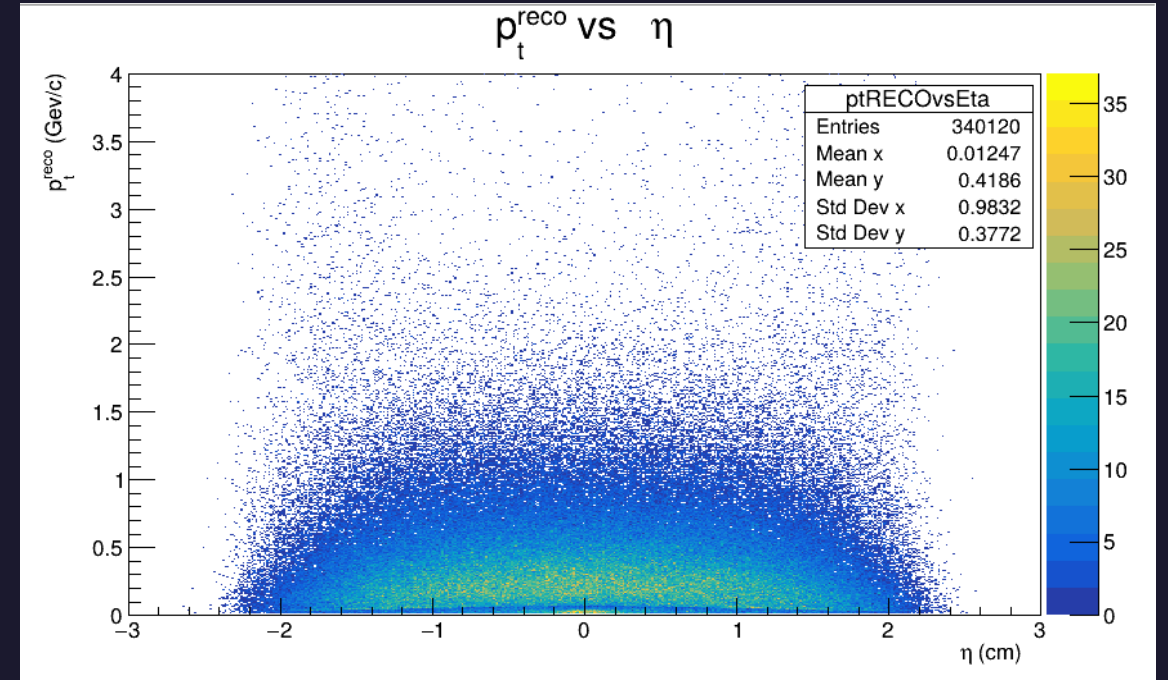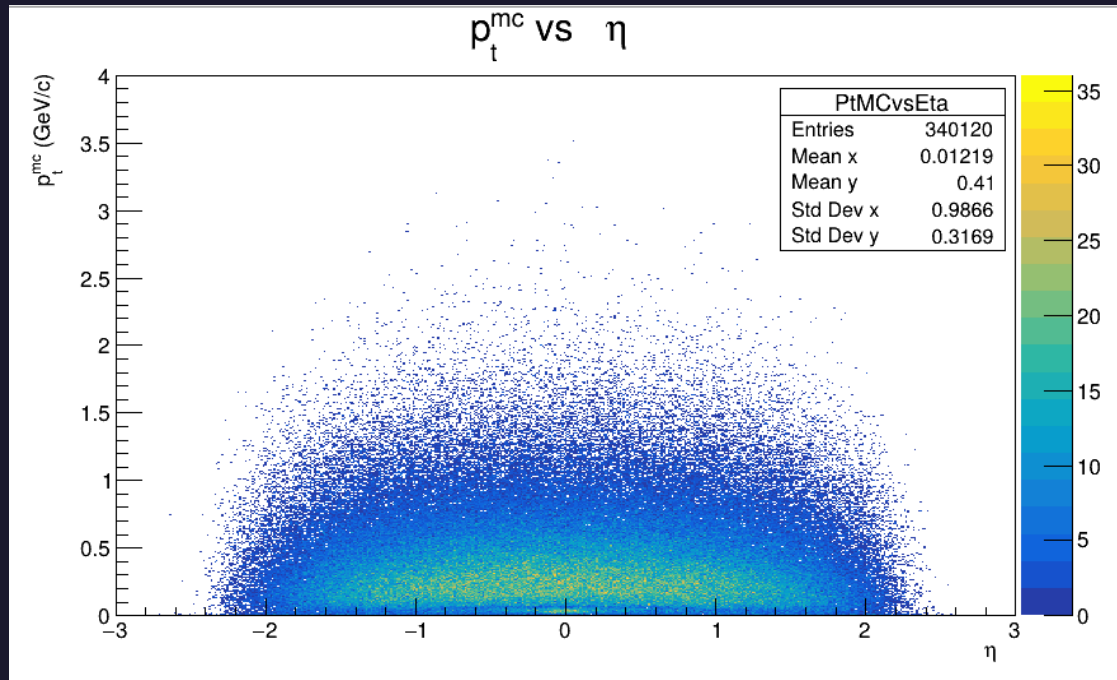
```
        // Numbers of Hits
PtNHits        ->        Fill(NHits, DPt);
PtDCAZ         ->        Fill(DCAZ, DPt);
PtEta          ->        Fill(Eta, DPt);

        // Numbers of Hits with cut
if(NHits >= 10){

PtNHitsC       ->        Fill(NHits, DPt);

}
```


Δp_T vs NHits

DptvsNHitsC	
Entries	326369
Mean	32.39
Mean y	0.2666
Std Dev	12.22
Std Dev y	0.8594

Histograms of ΔPt vs η

Obtain the Transverse Momentum Monte Carlo vs Pseudo rapidity
and Reconstruction vs Pseudo rapidity

The Next Steps

Obtain the histograms with weight.

For that we will divide the histograms Pt_{MC}/Pt_{Reco} and see what is happening.