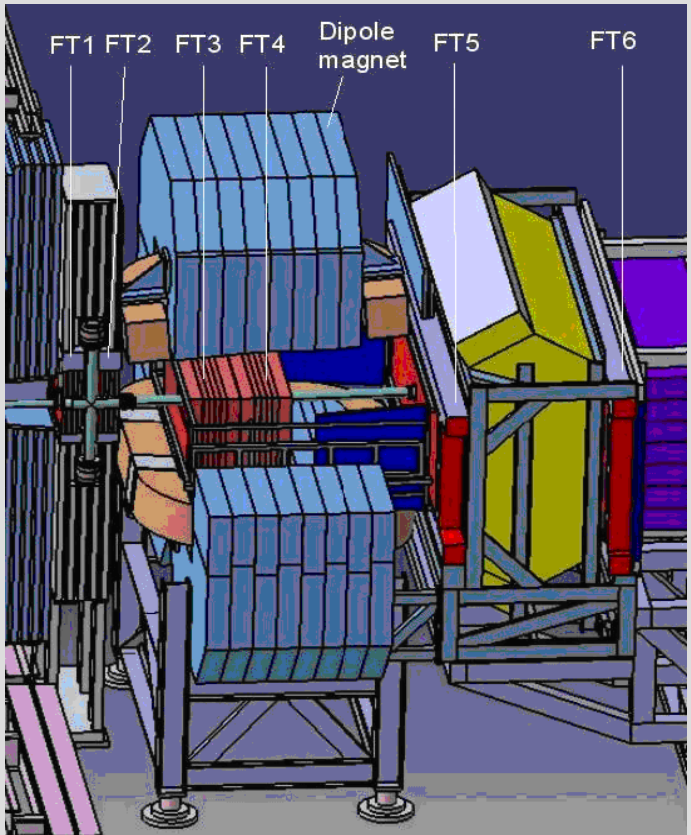
pbar-p & pbar-nitrogen simulations for FTS

Jacek Biernat

Jagiellonian University

Menu:

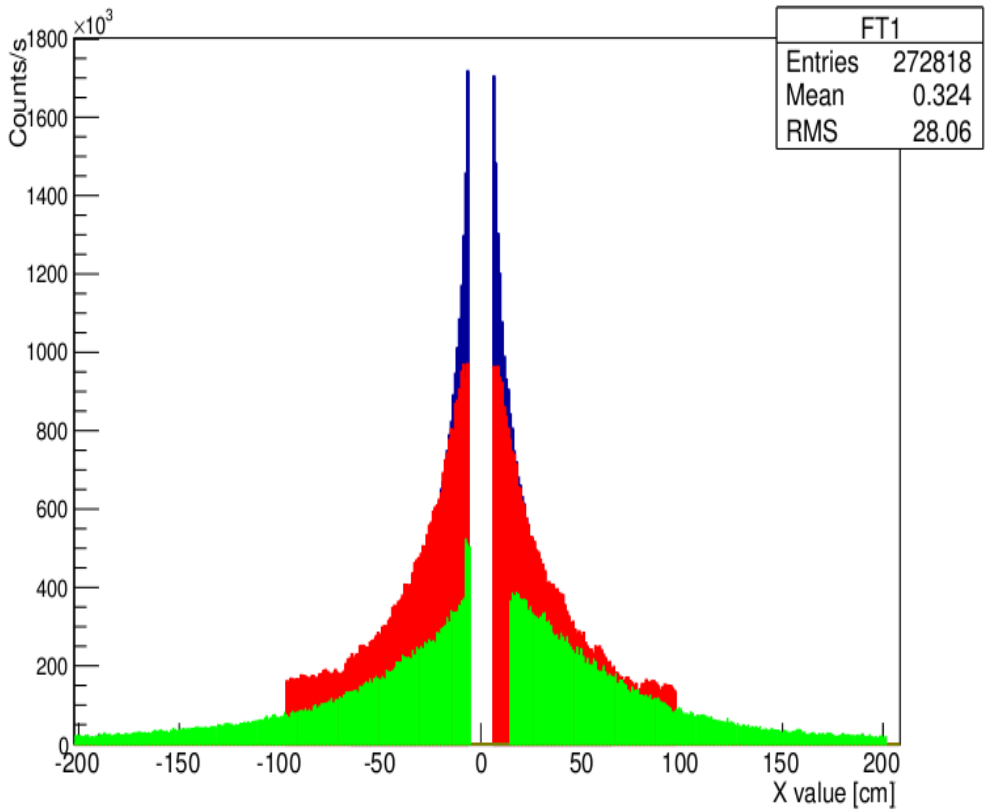
- Simulation done for FT1,FT3 and FT5;
- Different targets used (hydrogen & nitrogen)
- Setting: Beam momentum at 15 GeV/c; Reaction rate 2 x 10^7;
- Three types of geometry included, the real one and, the so called „dummy geometry” (three, cube like structures were placed instead FT(1,3,5), and also no beam pipe included);



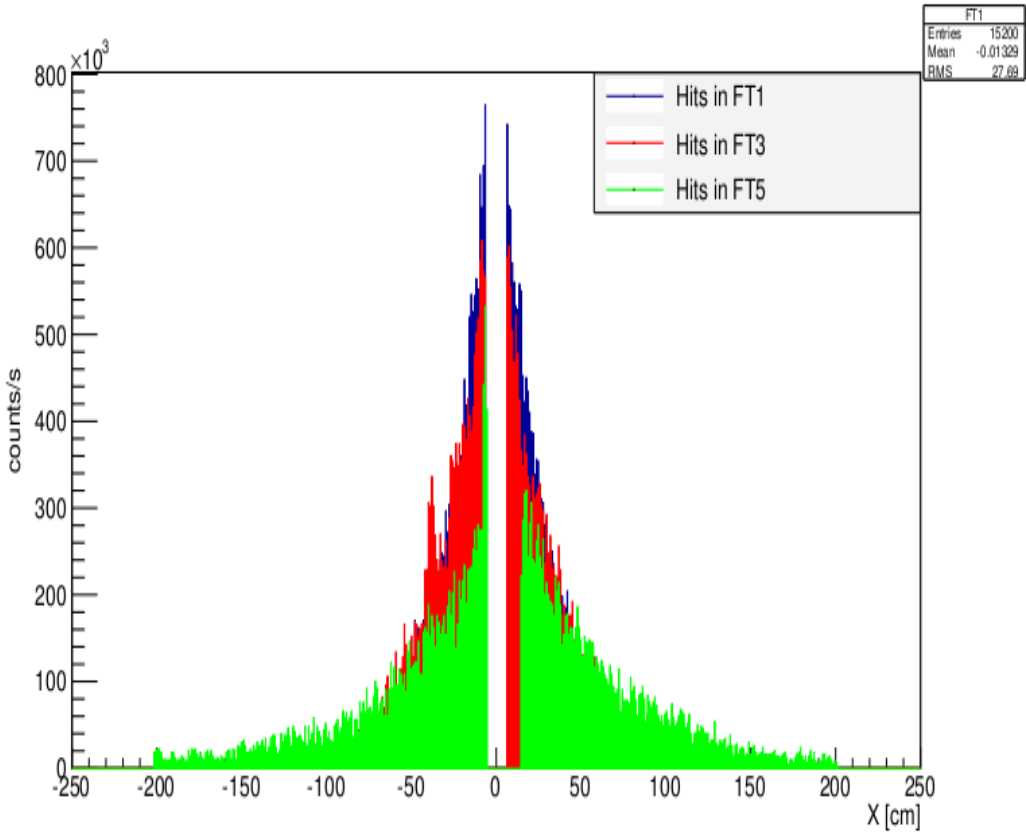
Counts per straw

Blue - FT1; Red- FT3; Green- FT5;

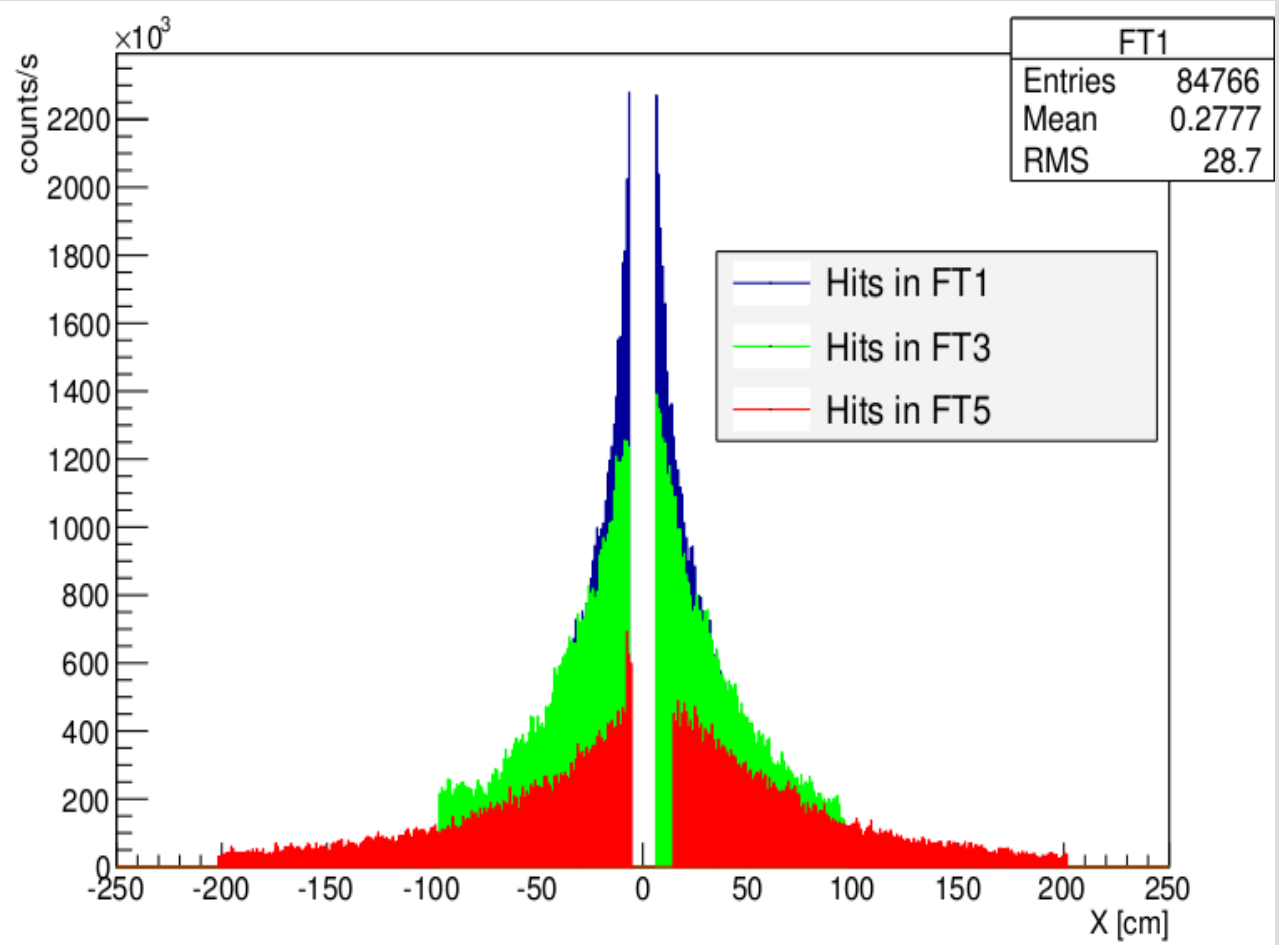
With beam pipe



With out beam pipe

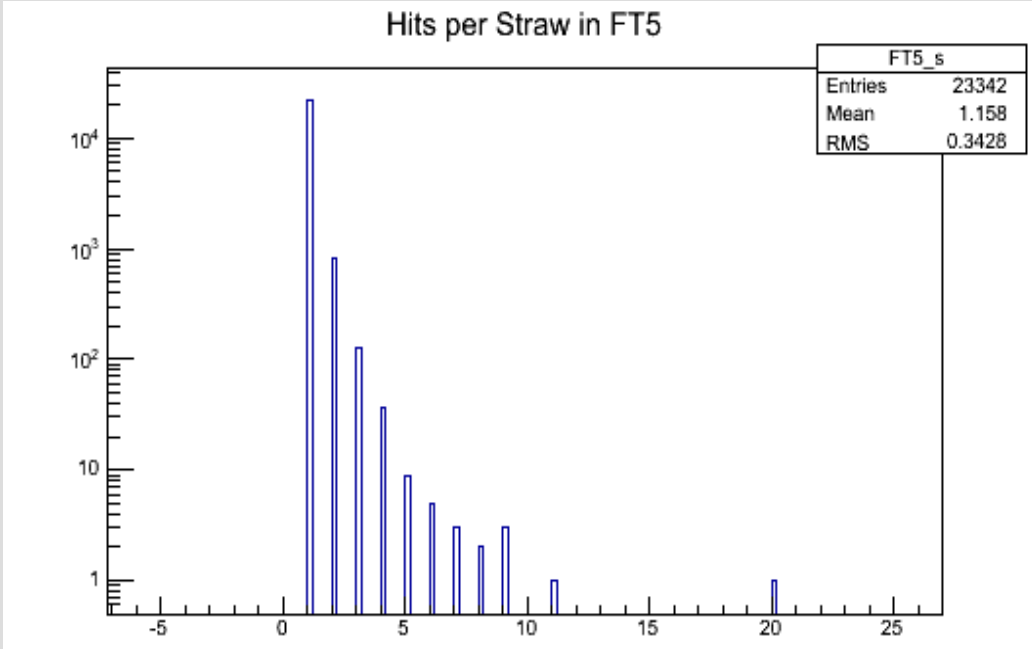


Pbar-N (with beam pipe)

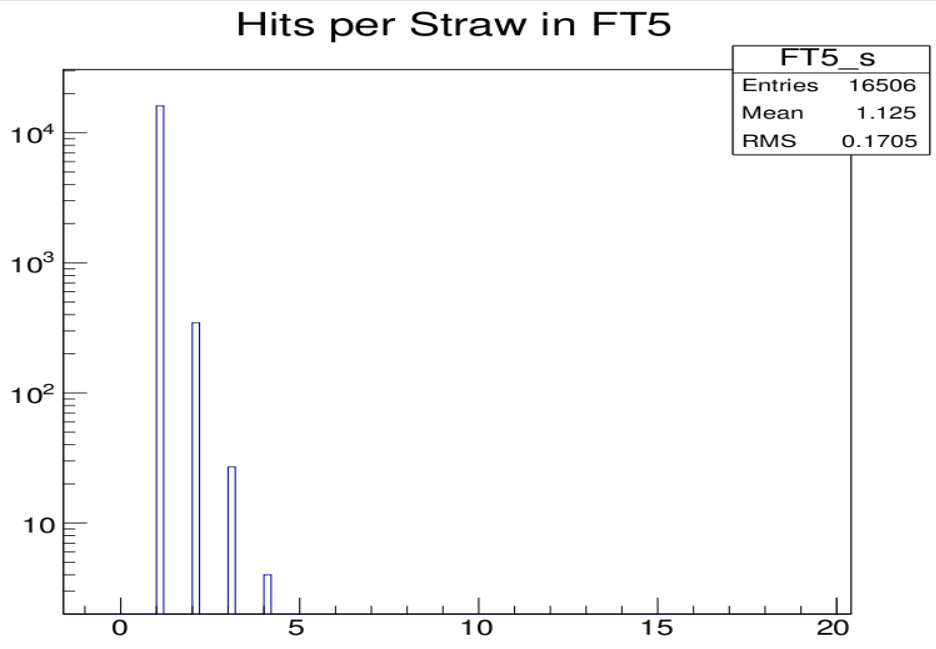


Hits per event with full geometry

With beam pipe



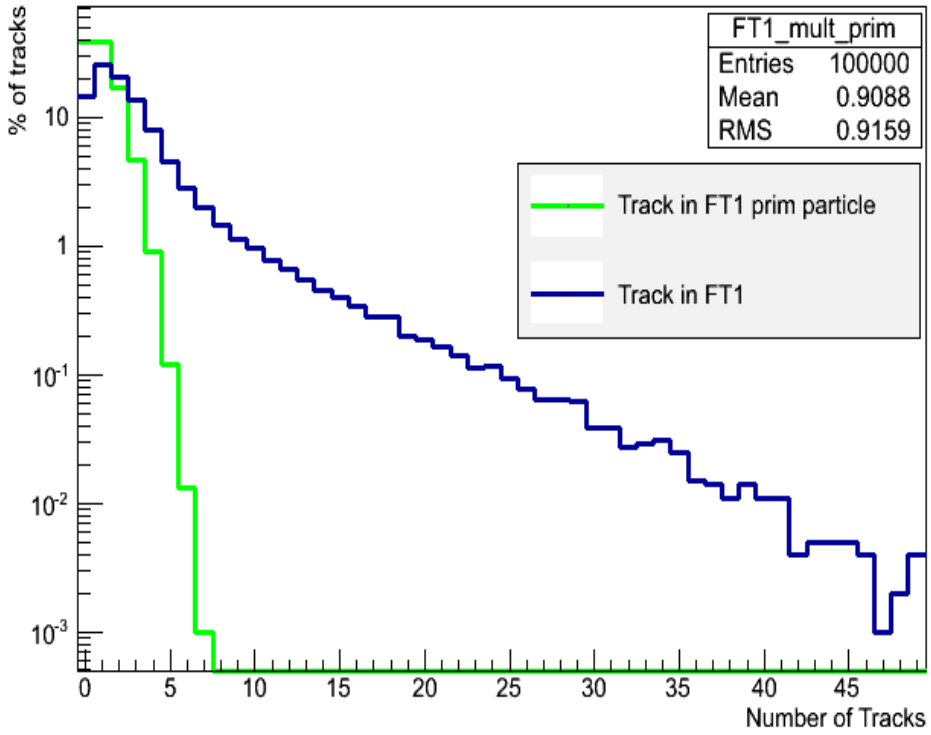
Without beam pipe



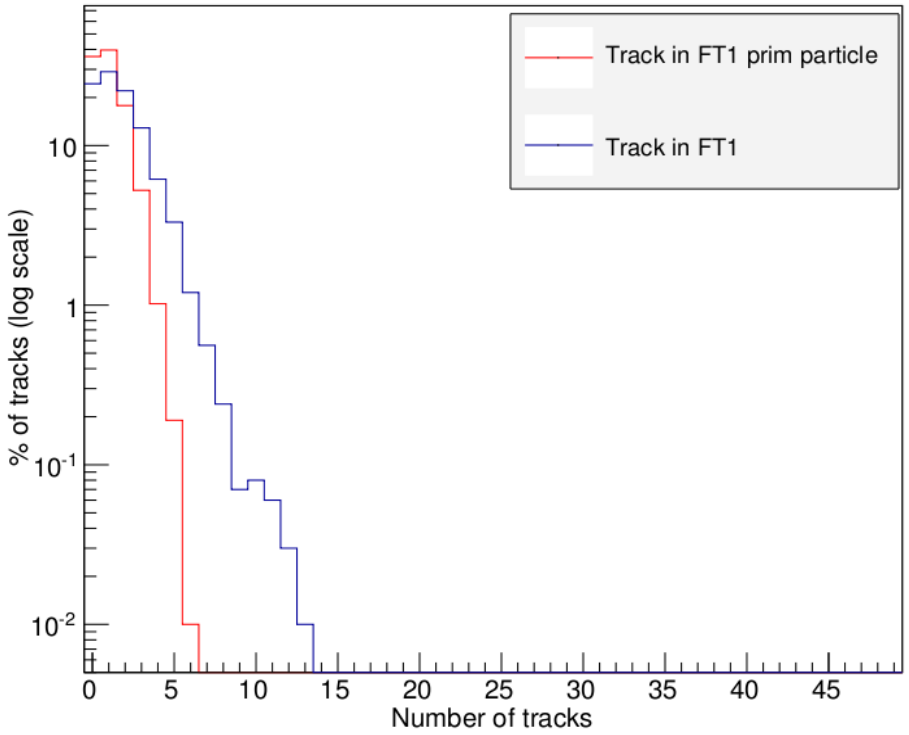
MC Track multiplicity in FT1

- Blue- all particle & Green- primary particle only

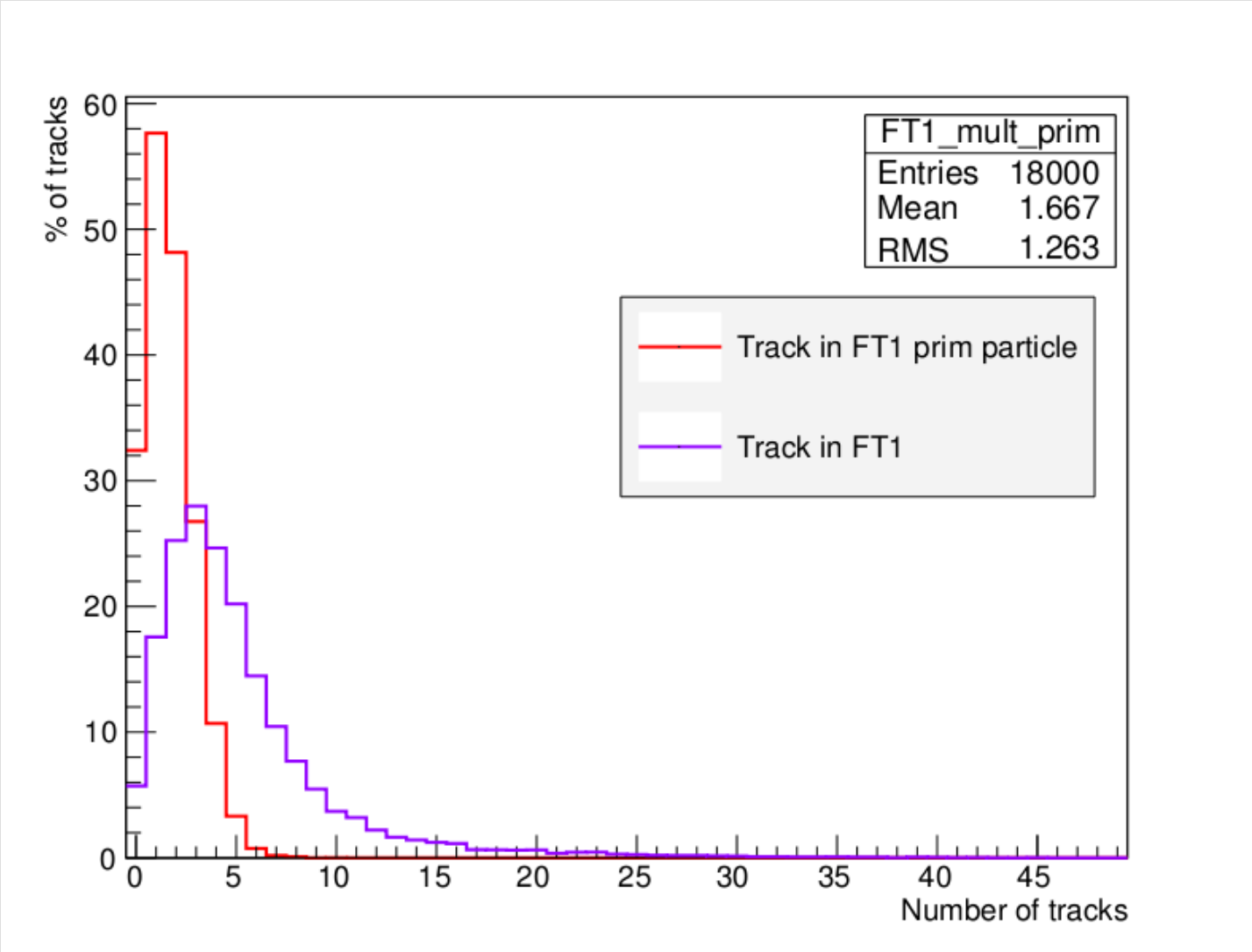
With beam pipe



With out beam pipe

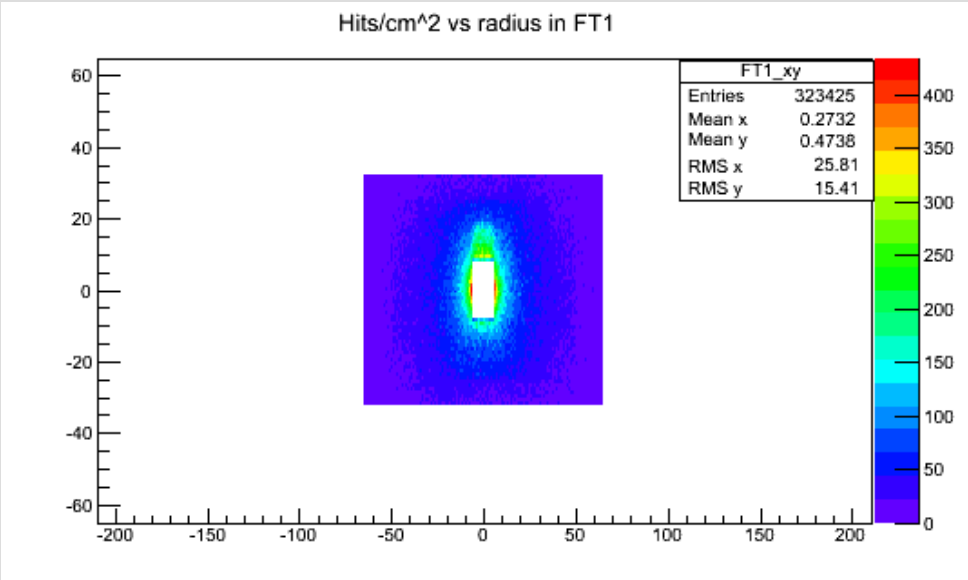


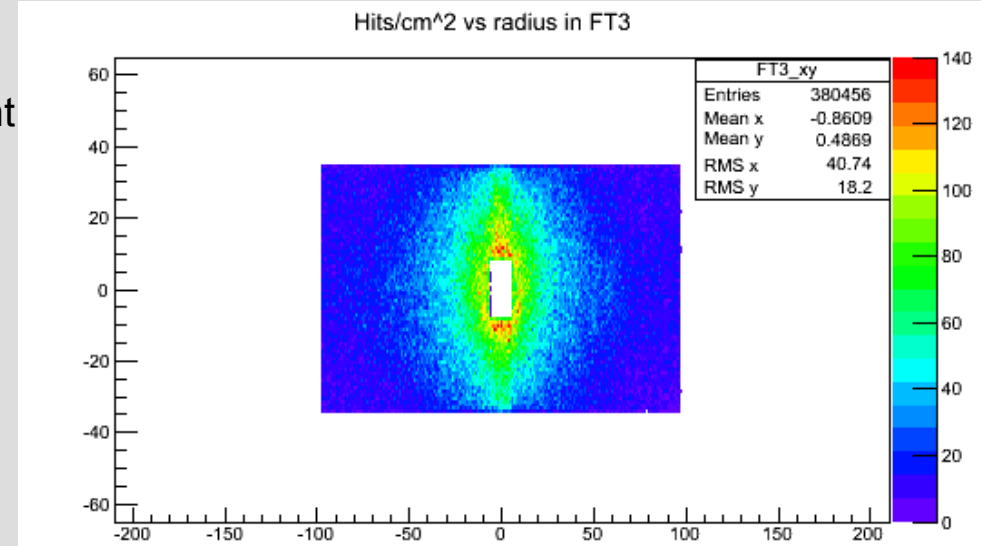
pbar-N

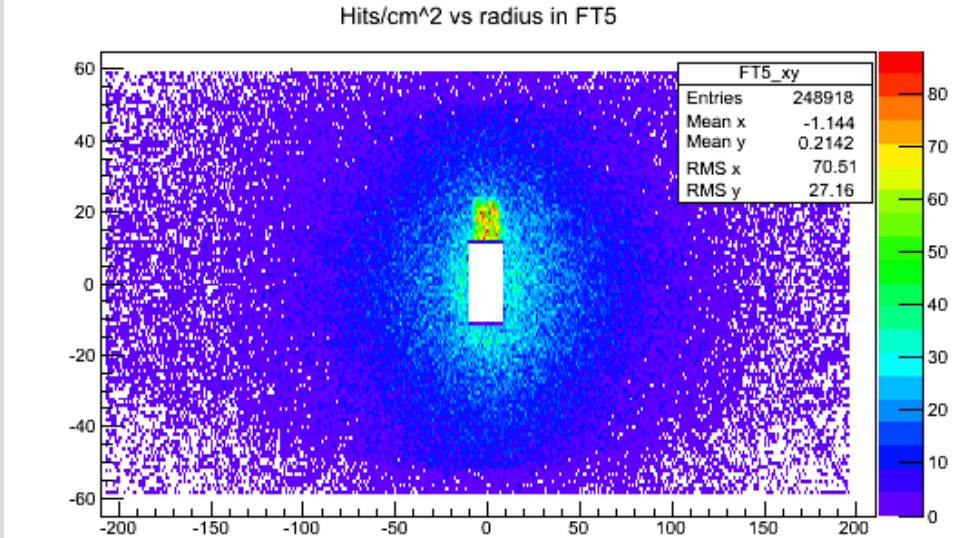

FT1_mult_prim
Entries 18000
Mean 1.667
RMS 1.263
Track in FT1 prim particle
Track in FT1
% of tracks
Number of tracks
0
10
20
30
40
50
60
0
5
10
15
20
25
30
35
40
45

Distributions of counts/cm^2 vs radius

- Distance R is larger then pipe radius.
- 2D and 1D plots
- Symmetric at 0 in FT3 & FT5 due to pipe adjustment

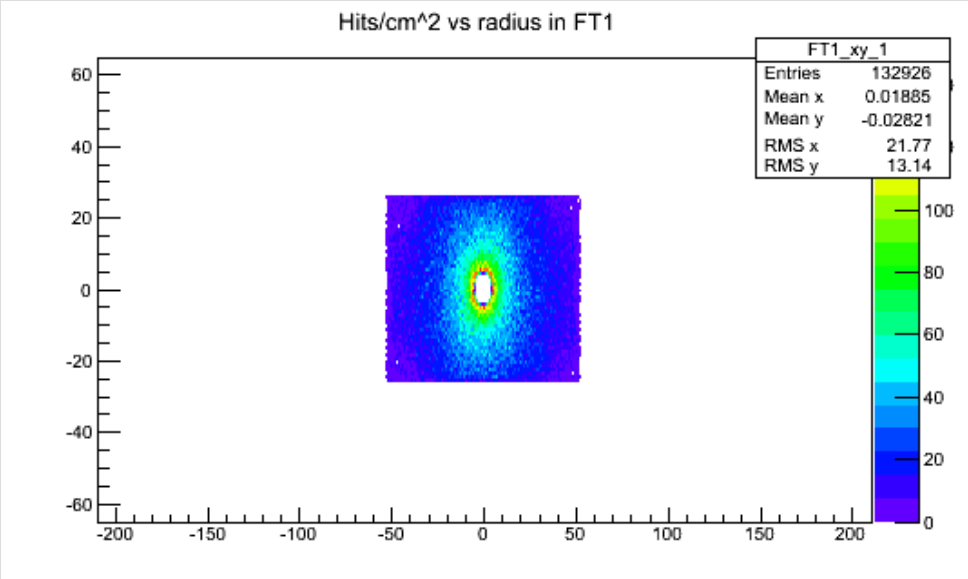


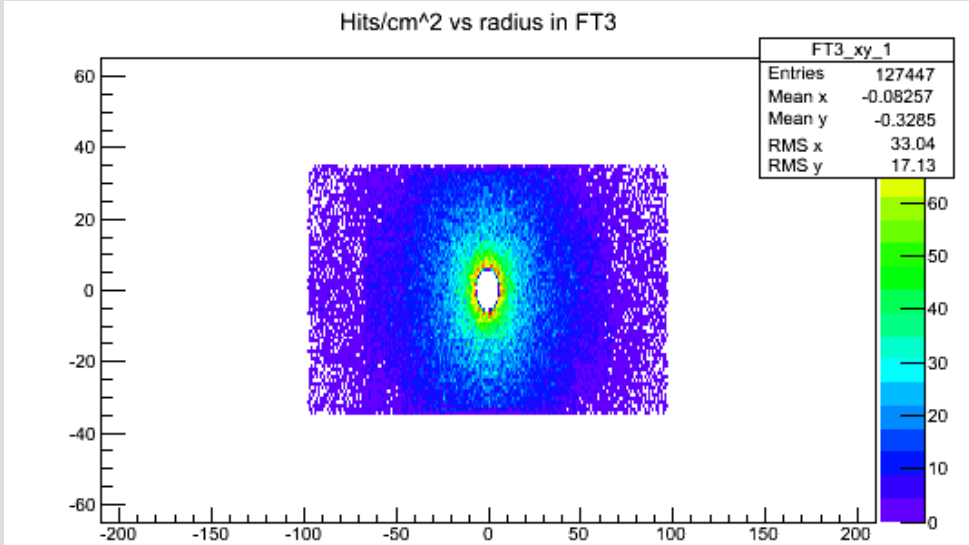


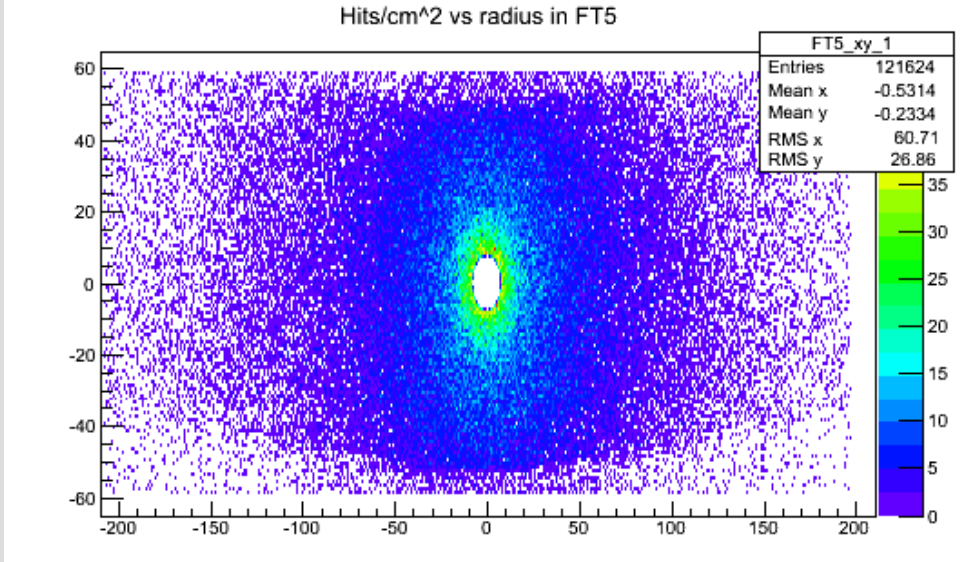


So called „dummy” geometry

- Counts/cm^2 in a 2D fashion

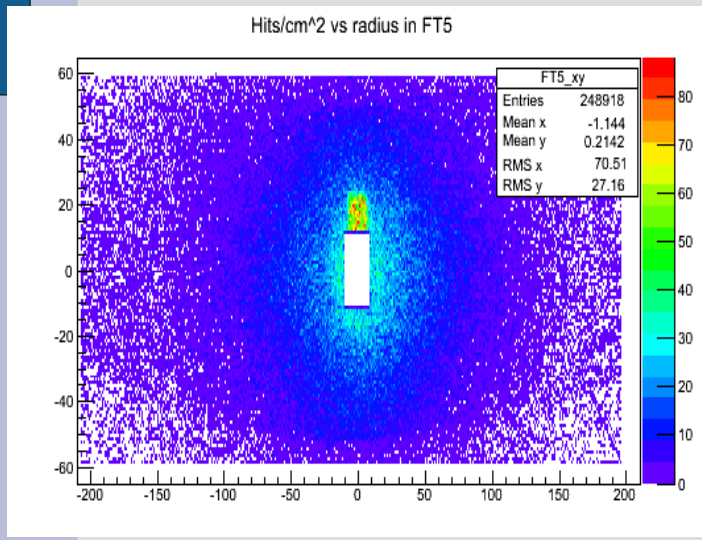




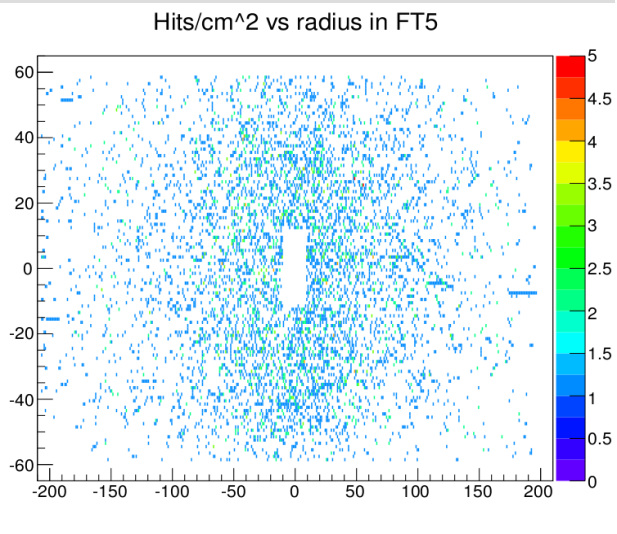


Comparing geometries for FT5

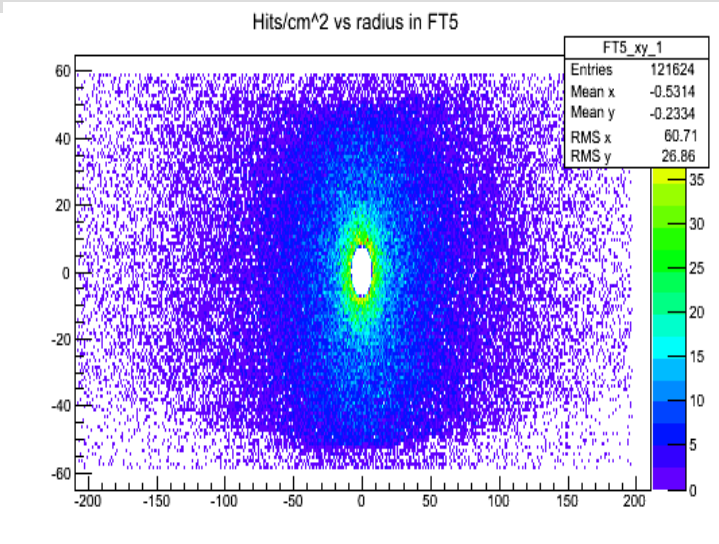
Full with pipe



full with out pipe

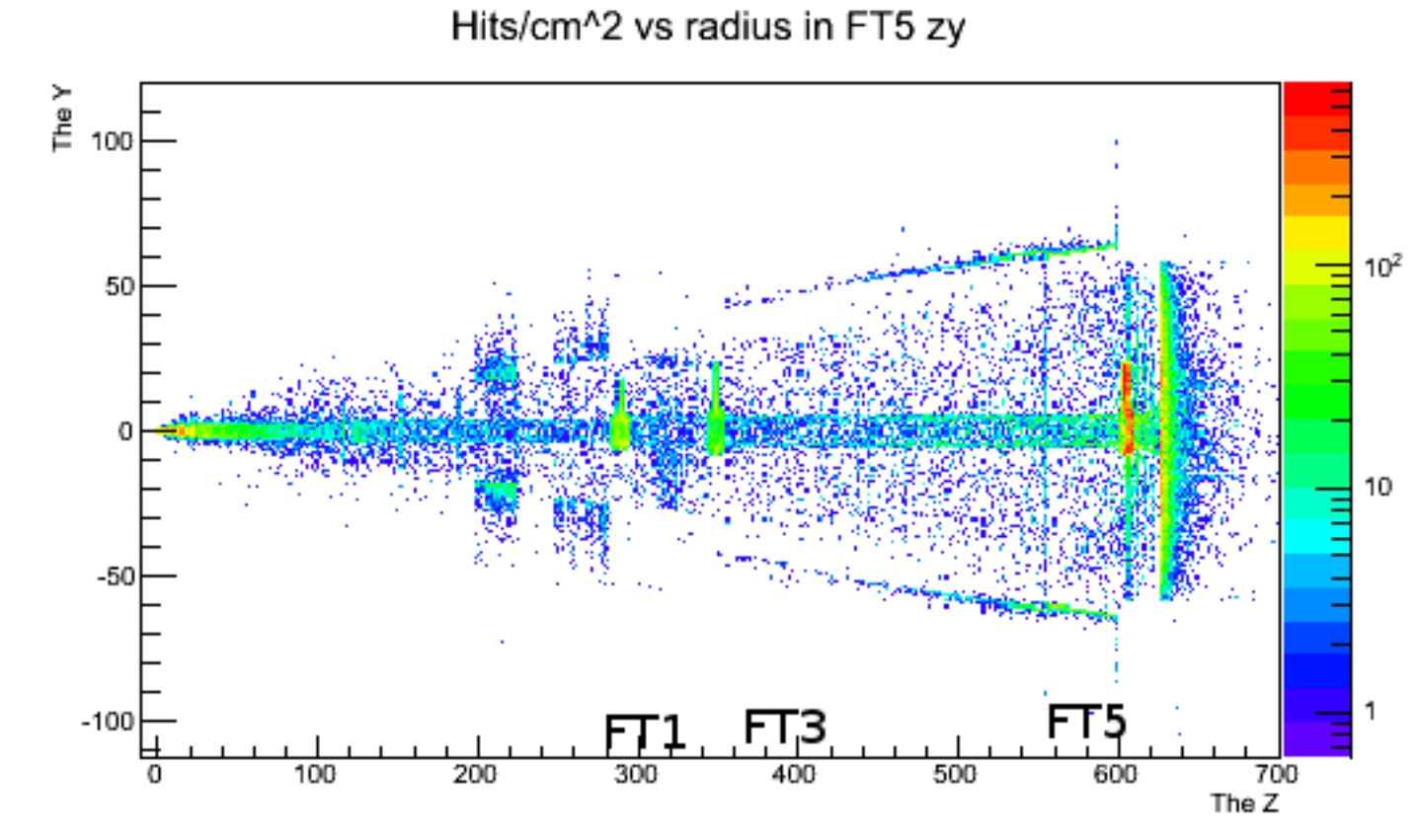


dummy



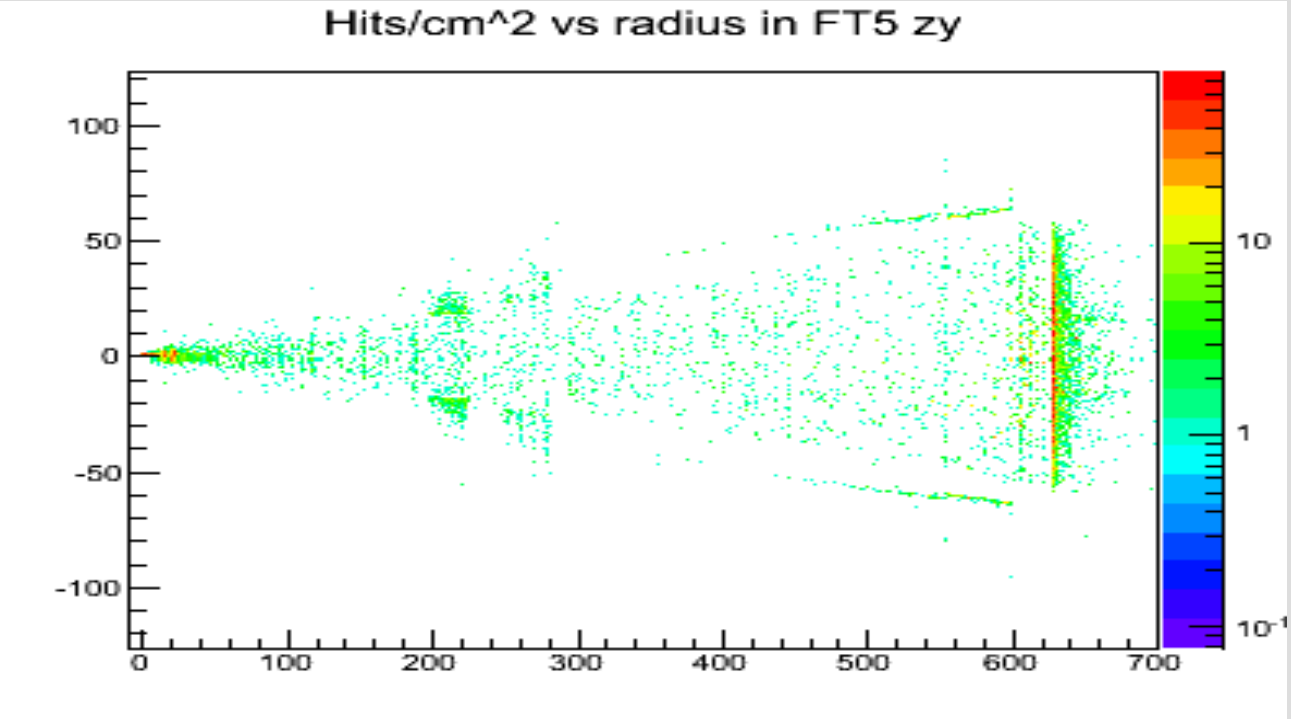
Production of seconderies

- Full geometry with & without pipe
- The Z for : FT1 = 294,FT3 = 395, FTH5 = 607



FT5

- No pipe

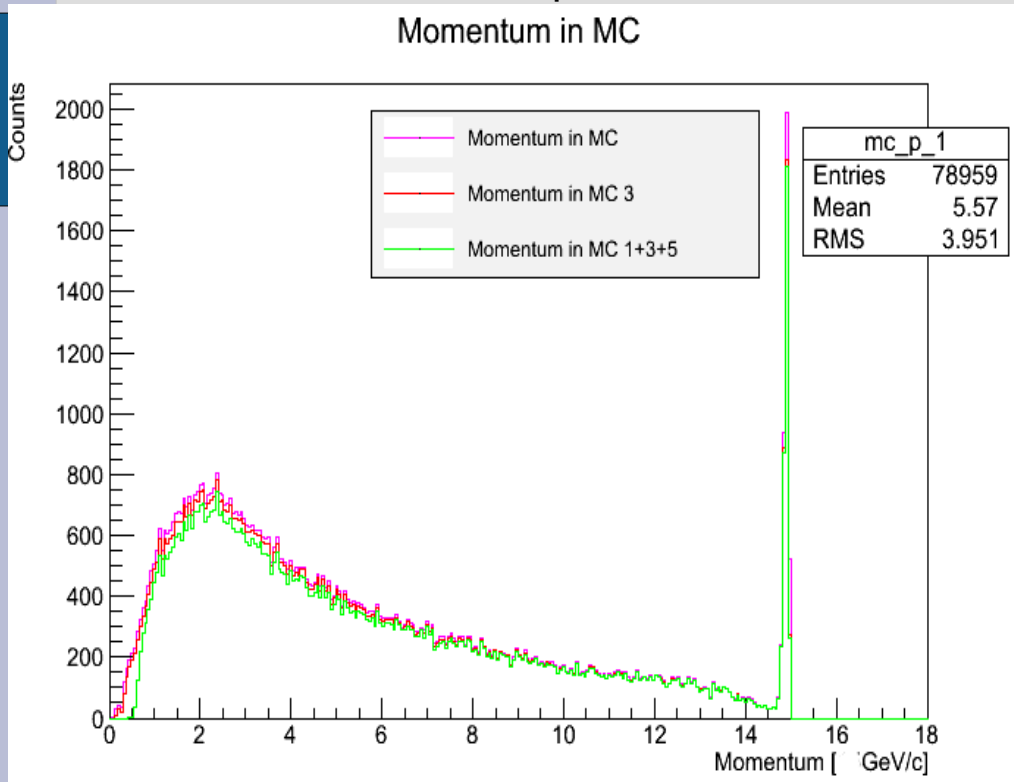

Hits/cm^2 vs radius in FT5 zy
100
50
0
-50
-100
0
100
200
300
400
500
600
700
10
1
10^-1

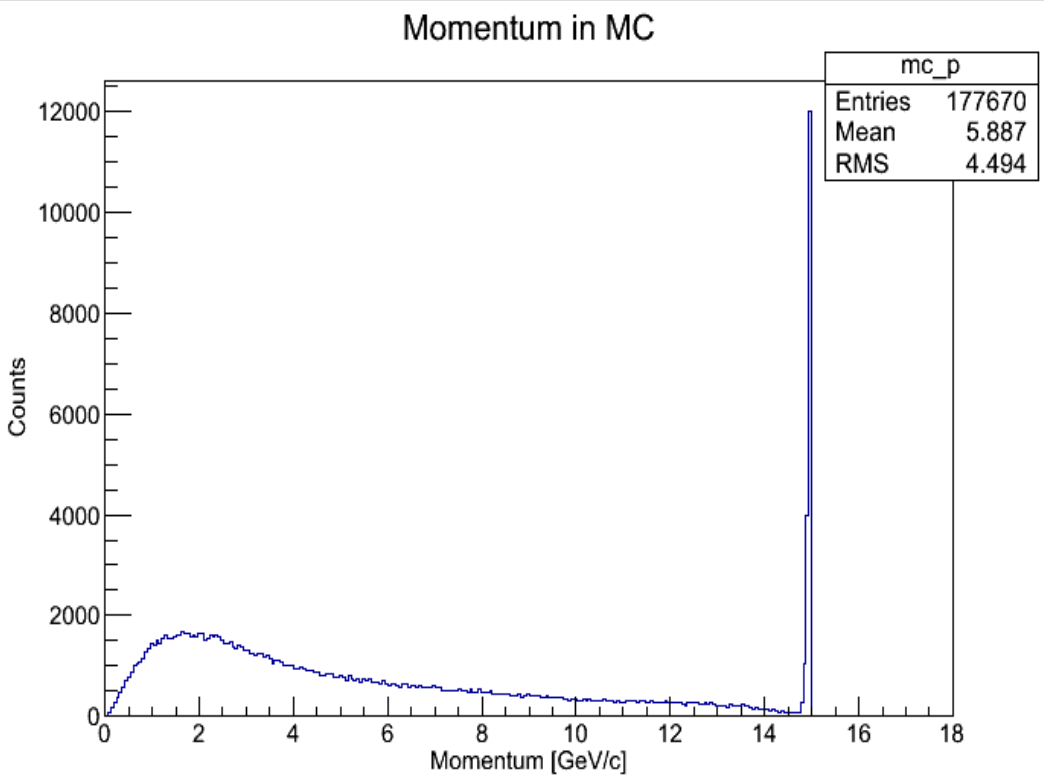
Backup slides

- counts/cm^2/s vs radius
- Momentum acceptance

Distribution of momenta of particles pbar-p

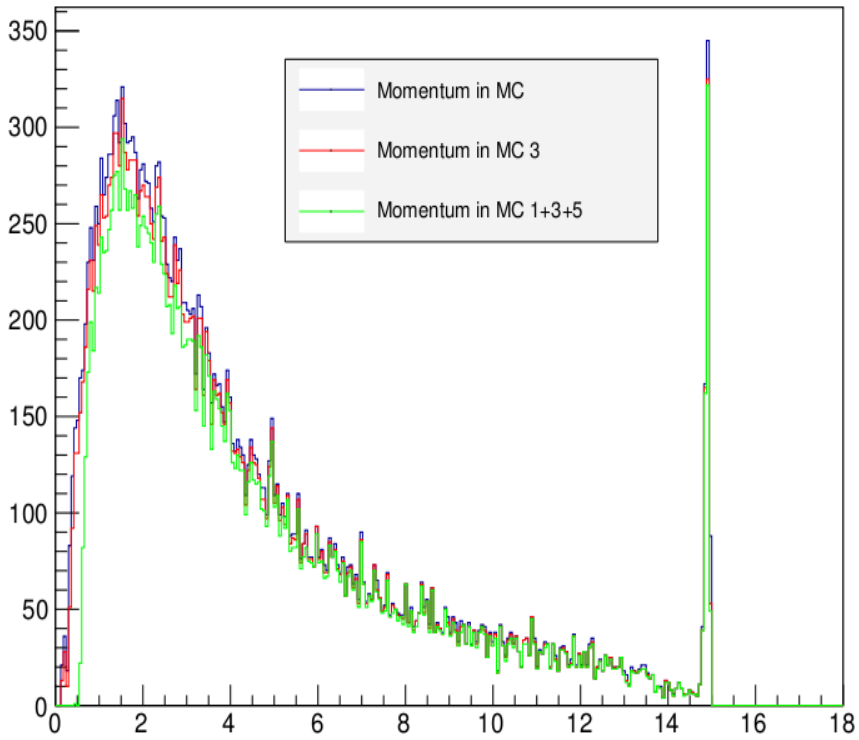
- The blue line include particle emission in in angular 10 degree and in horizontal 5 degree;

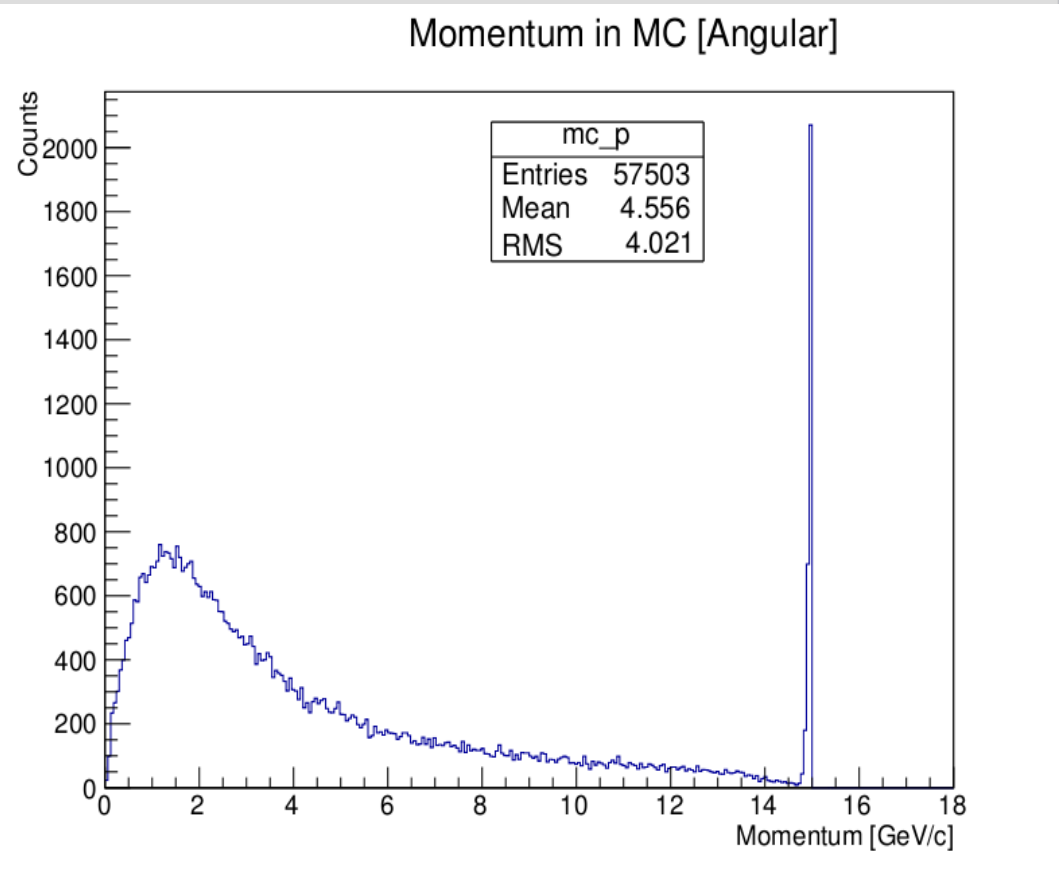




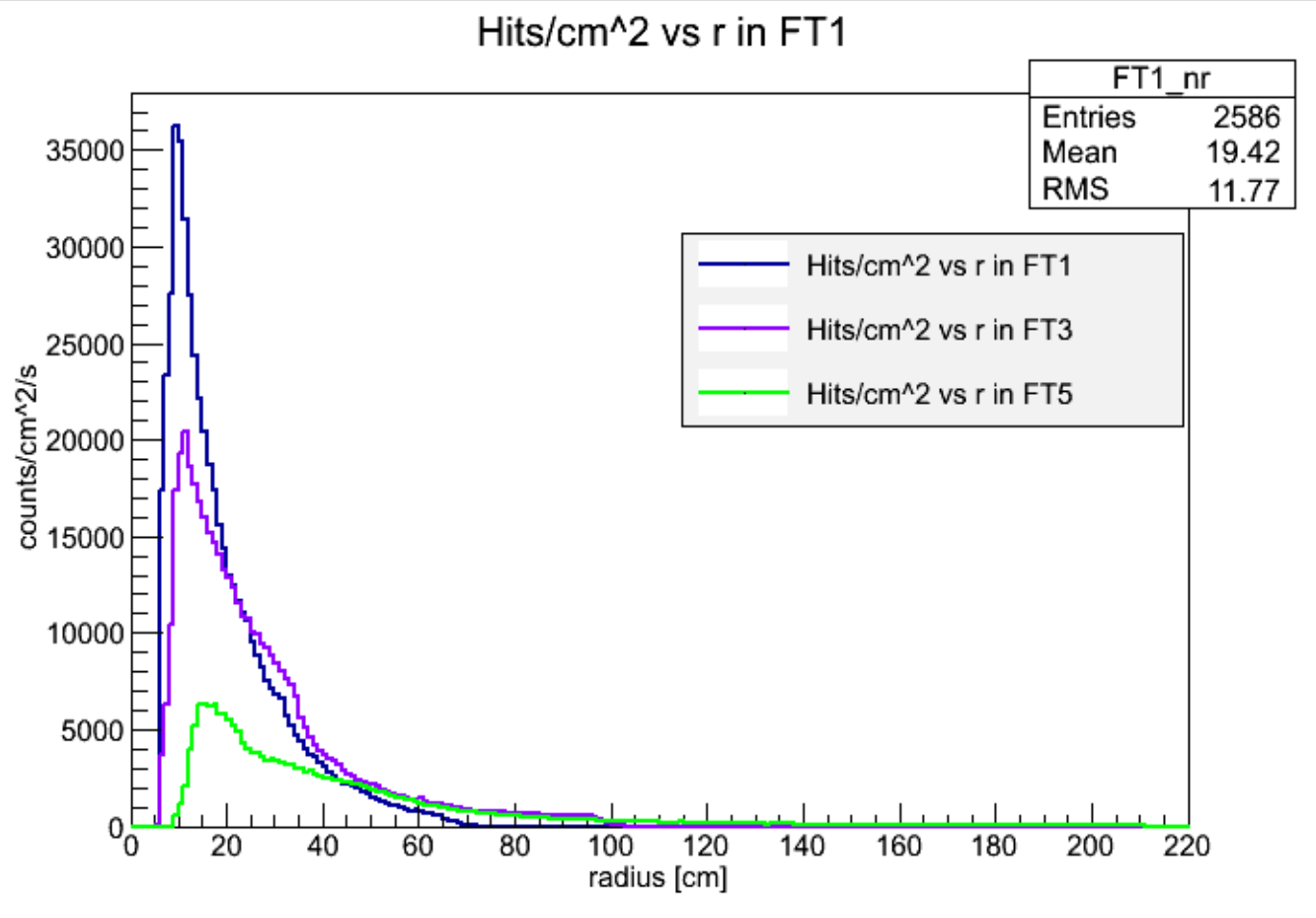
Distribution of momenta of particles

- pbar-N





Counts/cm^2/s vs radius



„dummy” geometry