Beam Test Data Analysis

Hit multiplicity at different angles: a short update

Bari Group

Selected Electron RUNS (data from SVAC & MERIT n-tuples)

Position
- X = 201 *mm;*
- Y = 40 *mm;*
- Z = - 47 *mm*

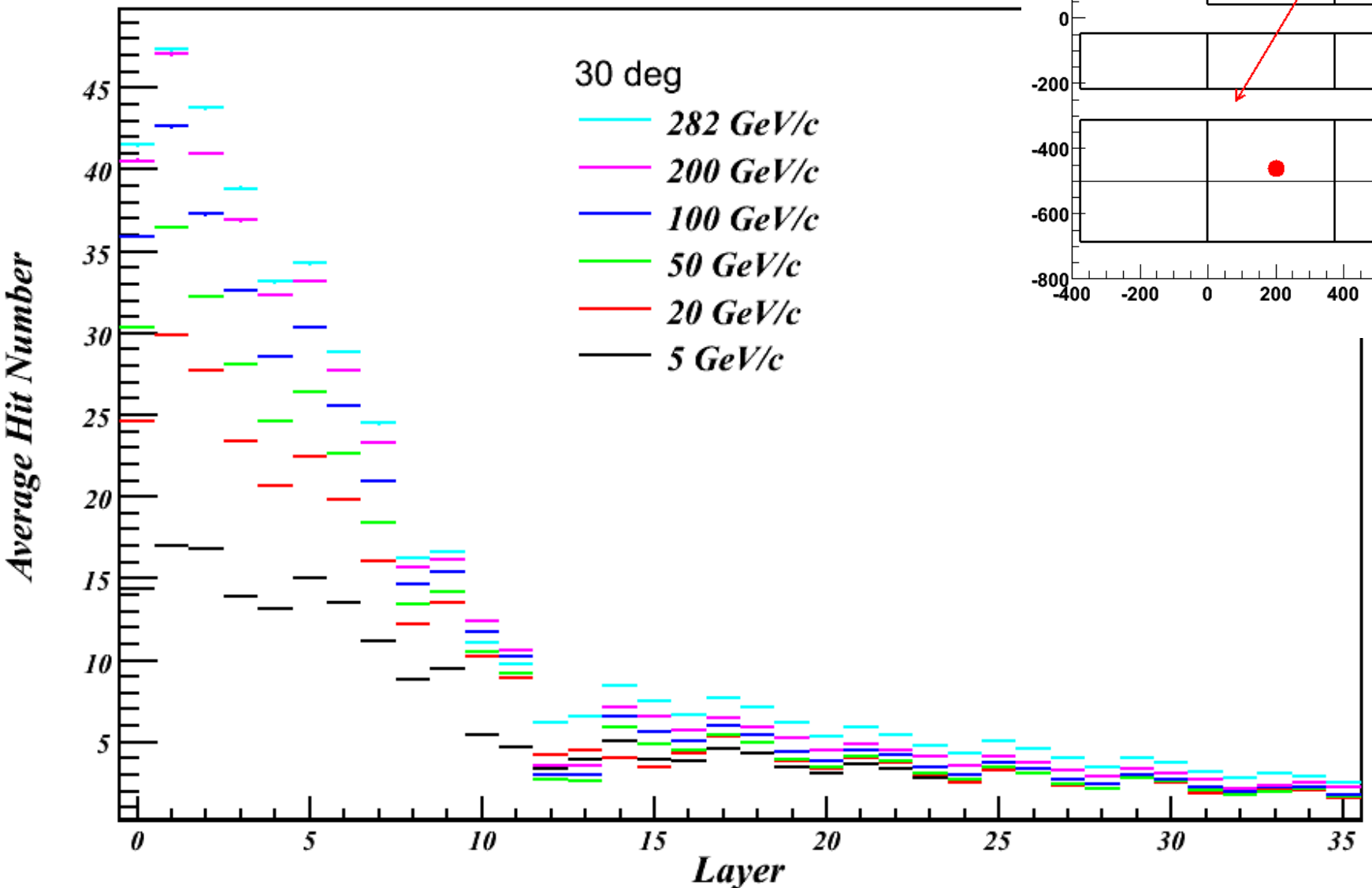
Cuts:
- "GltTower" > -1;
- "CalEneSum" > 0;
- "TkrNumTracks" ≥ 1;
- "Tkr1LastLayer" = 0;

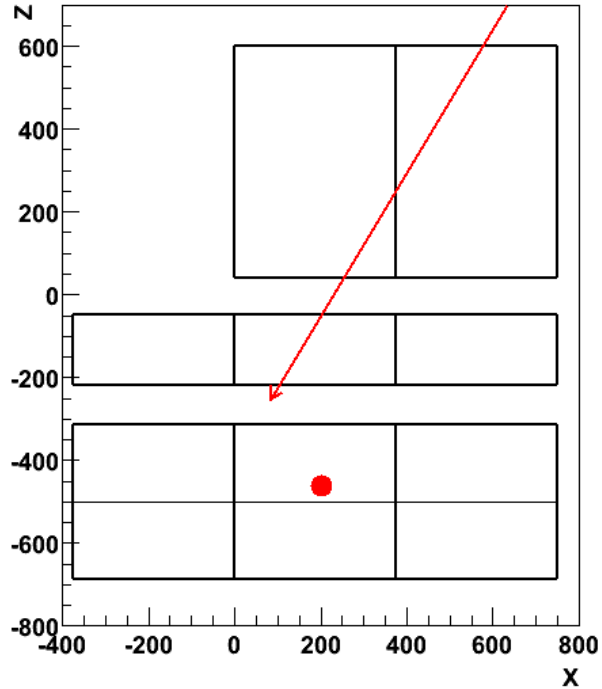
BT DATA (MC)

Momentum / Angle →	0 deg	10 deg	20 deg	30 deg	45 deg	60 deg
1 GeV/c	1259 (71)			1220		
2.5 GeV/c	1202 (123)			1222		
5 GeV/c	1460 (122)	1476	1485	1493	1504	1505
10 GeV/c	2338	2343	2348	2353 (179)	2357	2359
20 GeV/c	2082 (176)	2087	2092	2096	2100	2103
50 GeV/c	2039 (172)	2044	2050	2054 (173)	2058	2064
100 GeV/c	1981 (162)	1988	1993	1999 (169)	2003	2006
200 GeV/c	2035 (164)	1892	1898	1902 (168)	1906	1909
282 GeV/c	1922 (166)	1932	1938	1942 (167)	1946	1949

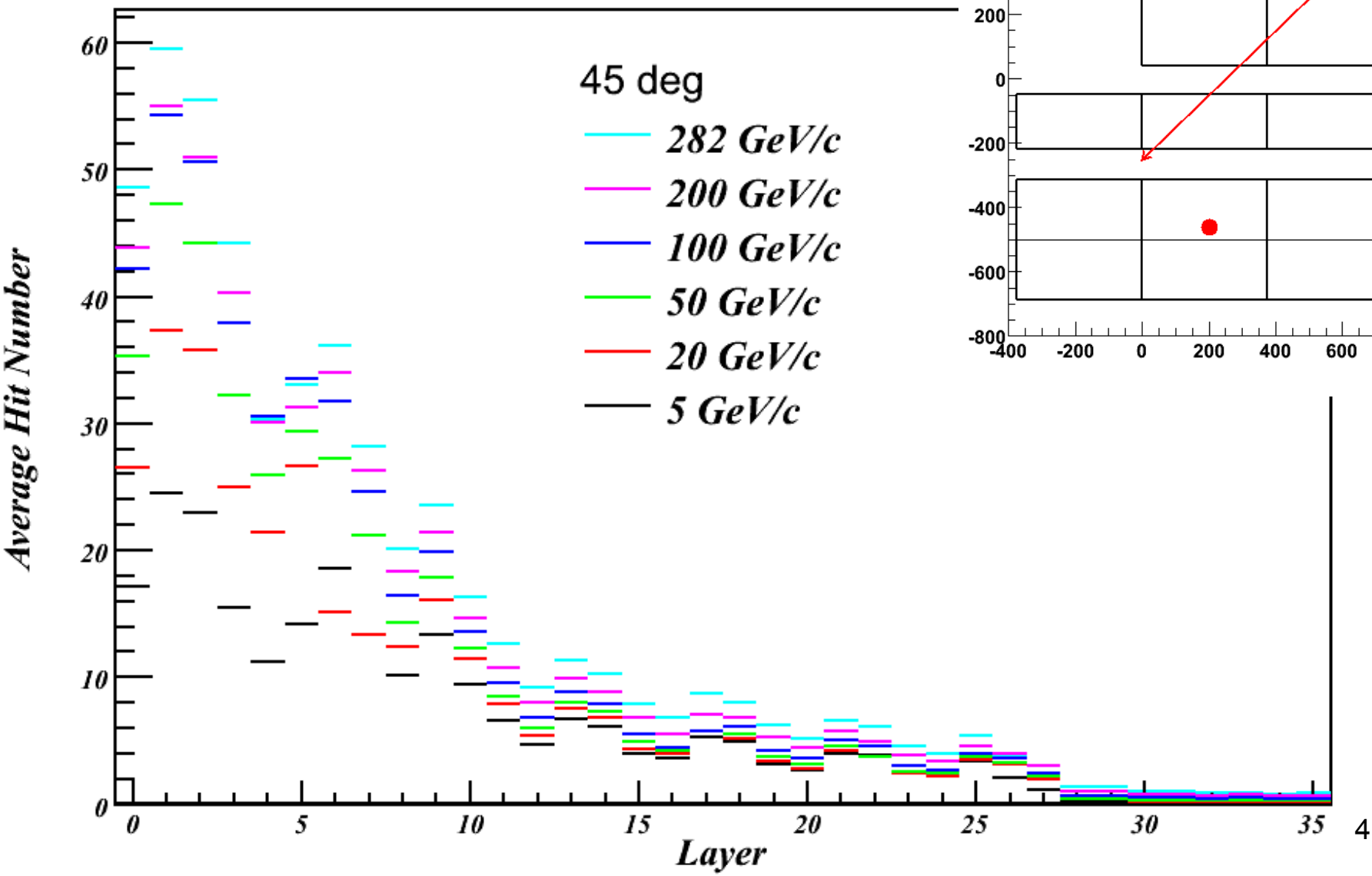
Hit Multiplicity layer by layer for

30 degrees electron runs @ different momenta





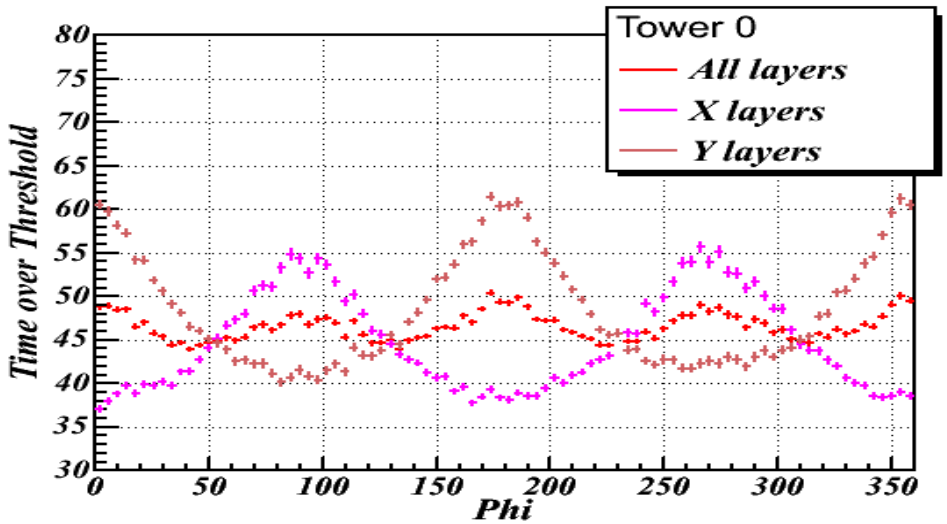
Hit Multiplicity layer by layer for 45 degrees electron runs @ different momenta

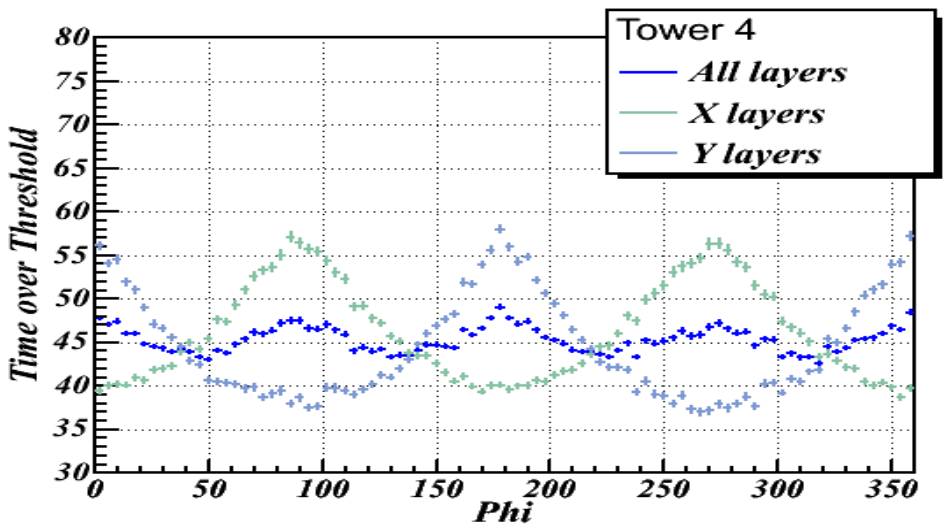


Remark

- ***The Number of Hit strips, as well as the ToTs, depends on the azimuth angle of the track with respect to the strip direction (X or Y), as already shown by the I&T data so far***
- ***For more details see:***
  - ***http://www-glast.slac.stanford.edu/IntegrationTest/SVAC/Instrument_Analysis/Workshop-4/Talks/SLACmeeting_loparco.pdf***
  - ***http://www-glast.slac.stanford.edu/IntegrationTest/SVAC/Instrument_Analysis/Workshop-4/Talks/2towers_LeftRight_brigida.pdf***

ToT vs φ for X and Y layers



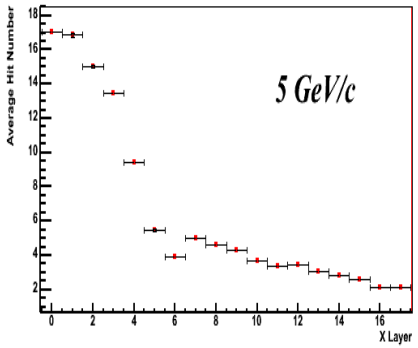


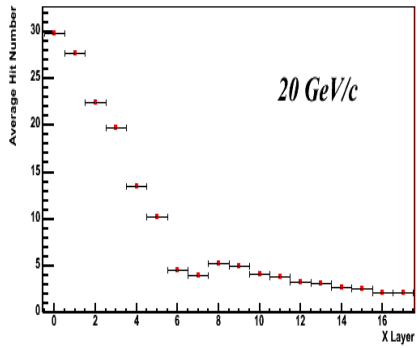
- ***The ToT dependence on φ is different for X-view and Y-view layers***
- ***The angular separation between maxima (minima) is 180°***
  - ***X-view layers show maxima at 90° and 270° (+Y and –Y)***
  - ***Y-view layers show maxima at 0° and 180° (+X and –X)***

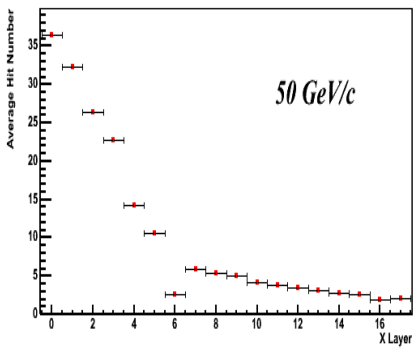
The ToT depends also on the projection of the track length in the SSD plane (XZ or YZ)

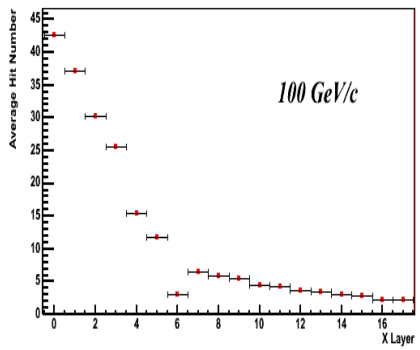
Hit profiles at 30°

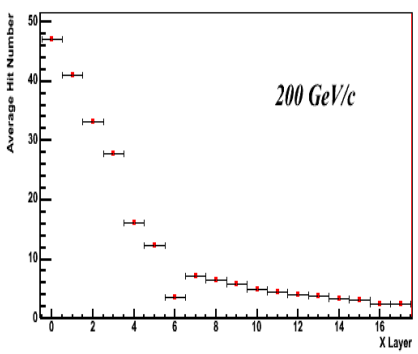
X-view

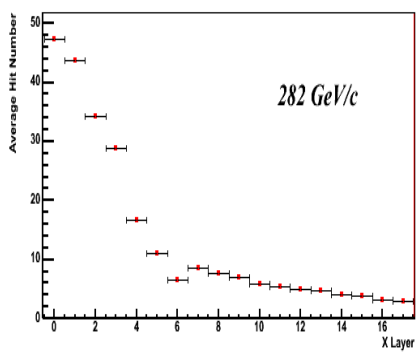












Y-view