GLAST EM: Distribution of Live TKR Trays

Hartmut Sadrozinski, 4/5/01

For the GLAST LAT Engineering Model (EM), a finite number of live trays, i.e. fully instrumented with SSD's and MCM's, will be available. For the location of the live trays in the EM TKR, consider two cases:

a) 2 thin trays, 1 thick tray
b) 2 thin trays, 2 thick trays.

Will use the single hits in the top and bottom of the live trays to detect conversions. Low noise of TKR and correlation with hits in lower layers and shower direction makes this possible.
The CAL wants to check the correction due to the longitudinal conversion point and the energy loss. The average mass to be corrected for is about half the material between TKR measurements.
It looks as the case for 2 thin and 2 thick trays is quite good. About 30% of the gamma's will not convert in the TKR and will have to be corrected by max 2.5%
(Counting from top, starting with 1):

a) 2 thin trays, 1 thick tray

Live tray		Mass before measurement	Average Mass to correct for between measurements
Tray 6	"x"	23%RL	11.5%RL
Tray 11	"y"	46%RL	11.5%RL
Tray 14	"x"	95%RL	12%RL
"No Conversion"		1.37R.L	21%RL

b) 2 thin trays, 2 thick trays

Live tray		Mass before measurement	Average Mass to correct for between measurements
Tray 6	"x"	23%RL	11.5%RL
Tray 11	"y"	46%RL	11.5%RL
Tray 14	"x"	95%RL	12%RL
Tray 16	"x"	1.14RL	10%RL
"No Conversion"		1.37R.L	2.5%RL