Subject: Dipole and transcient B field effect
Posted by Tsitohaina Randriamalala on Tue, 19 May 2009 15:50:01 GMT
View Forum Message <> Reply to Message

Dear all,

I have performed simulations just to check if the B fields (especially for the dipole and the transition region) are as well implemented in pandaroot as how they are described in the Magnet Technical Design Report (MTDR).
5000 events with single antiproton propagated from the IP at different momenta (1.5 , 4.06 , 8.9 , 11.91 , 15 GeV/c) were run. At z=10m is placed an active plane. No subdetector, including the beam pipe was used.
The projection on x-axis of the hit positions are plotted (see attached files) for these values of momenta.
According to the MTDR, at z=10m, the distance that separates the two extreme antiproton beams trajectories is 0.4mm. Here I got about 1 cm wide. Too wide!!!
I think the field maps need to be treated with more accuracy!
Otherwise the scattered particles by the beam pipe will create a high level of background for some forward subdetectors (for the luminosity monitor, for instance).

Thank you.
Cheers,

File Attachments

1) Dipole_effect_X.ps, downloaded 560 times