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Subject: Re: back-propagation with GEANE

Posted by [Anastasia Karavdina](#) on Tue, 25 May 2010 12:57:57 GMT

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Hi Lia and Alberto,

I'm simulating antiprotons from the IP (0, 0, 0) with beam momentum 8.9 GeV/c in angles range (2,9) mrad for theta and (0,2\*Pi) for phi angle.

The luminosity monitor is placed at 11 m downstream in z direction and z axis of the luminosity monitor is rotated for 2.33 degrees at 4.76 m. So it should be placed close to beam pipe.

But in my simulation I switched off beam pipe and I don't have any material before first plane of the luminosity detector.

You are right, in absence of magnetic field differences in my plots are very small. But as I don't have any material I can explain these differences only in two ways:

a) It's accuracy of calculation methods used in GEANE.

b) I did something wrong.

Differences in absence of magnetic field are not important I've asked you just to be sure that I used GEANE correct

In magnetic field situation become worse: I have difference  $2 \cdot 10^{-3}$  rad for phi angle and  $7 \cdot 10^{-6}$  rad for theta angle. From multiple scattering I expect uncertainties about  $6 \cdot 10^{-5}$  rad for this beam momentum and for phi angle I obtained much more difference. Also I worried about two spots in plot of momentum magnitude ( $\Delta P(P_{MC})$  in file uncer.eps from my first post). Here  $\Delta P$  is a difference between true simulation value  $P_{MC}$  and magnitude of momentum obtained after back-propagation. Do you know any reason why I obtained two different value for momentum magnitude after back-propagation?

Cheers,  
Anastasia.

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