Subject: Re: back-propagation with GEANE
Posted by Lia Lavezzi on Mon, 28 Jun 2010 10:35:55 GMT
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Hi Anastasia,
EPSIL is the boundary crossing precision in cm.
I simulated 100 events of 1 GeV/c muons at theta = [-10, 10] deg, phi random, with magnetic field in the usual cave (air) on a silicon plane orthogonal to the z axis, placed at 300 cm and 0.02 cm thick --> the surface should be at 300 - 0.02 = 299.98 cm.

In the plot I attach I draw the z coordinate registered on this plane in different cases:
1) with the epsil as it is on svn, 0.001 both for air and for silicon
2) with the epsil = 0.0001 for silicon and = 0.001 for air
3) with the epsil = 0.0001 both for air and for silicon

In the third case, where I ask for a precision of 1 mum, the registered z coordinate after simulation is closer to the real surface (by printing the values from root with the Scan function I get in the three cases: 1) 299.98025, 2) 299.98025, 3) 299.98004 cm).

Then the epsil value has an effect, but maybe it is not enough in your case, because we are in a very ideal case and we are talking of rounding errors that are below the limit set by epsil. Anyway it should happen that in real life the rounding errors are covered by physical effect errors and finite resolutions and you can neglect them, I hope...
Cheers,
Lia.

File Attachments

1) epsil.ps, downloaded 314 times