Subject: Re: box generator
Posted by Pablo Genova on Thu, 24 May 2007 17:43:18 GMT
View Forum Message <> Reply to Message

Hi Stefano and generators' people,

triggered also by Katarzyna and Felice, I checked the two generators, the former CbmBoxGenerator and the PndBoxGenerator with option SetCosTheta(), which Stefano wrote recently.

As they suggested, I used a detector consisting of a sphere, everything in vacuum.

You can see the results in the attached plots

1. box_NON_uniform.jpg : with uniform theta.
2. box_uniform.jpg : with uniform cos theta.

As expected the first plot shows enhanced momenta in region x=0 & y=0, i. e. along the zed axis , and only using the SetCosTheta option you get the truly uniform generation.

So everything is OK, but I would strongly suggest to put a comment a like: "if you want to generate uniformly in the solid angle use the SetCosTheta() function" or even call that function SetUniform3D() , to avoid errors or misunderstandings.

Maybe even in the macros it is better to default to uniform distributions, with suitable comment to clear this to the user.

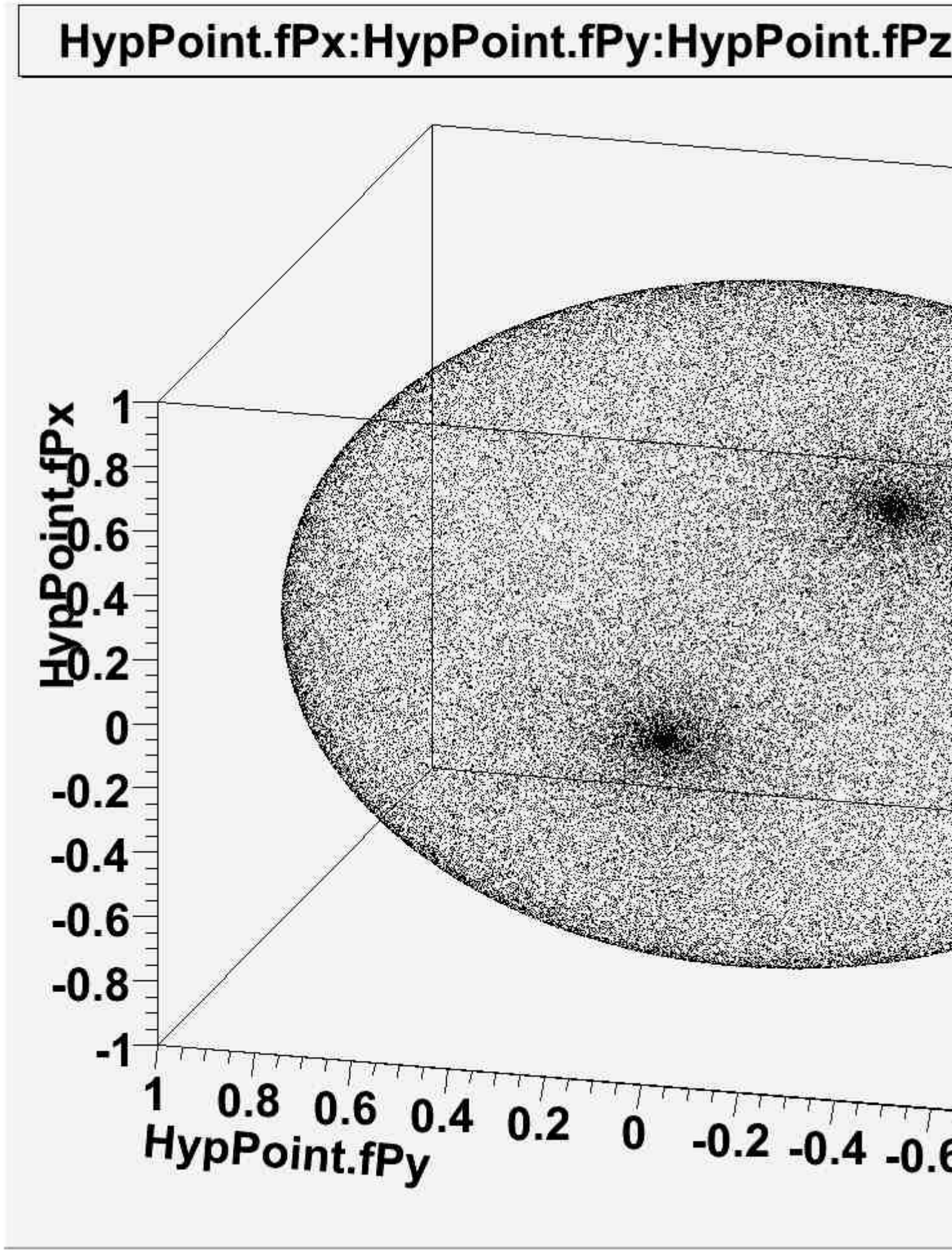
(I went into the mistake of supposing uniform what uniform was not!)

ciao, Pablo

ps: this forum is wonderful!

File Attachments

1) box_NON_uniform.jpg, downloaded 3525 times


HypPoint.fPx:HypPoint.fPy:HypPoint.fPz
HypPoint.fPx
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
HypPoint.fPy

2) box_uniform.jpg, downloaded 3568 times