Subject: Unexpected particles in Event Display window.
Posted by Ajay Kumar on Sun, 13 Sep 2015 11:07:43 GMT
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Dear All,

I have simulated two decay reactions using EvtGenDirect at just production threshold. These are the reactions.

pbar p -> J/psi pi+ pi- -> e+ e- pi+ pi- (beam momentum = 5.049089 GeV/c and just above at 6.0 GeV/c).
pbar p -> D*+ D*- -> D0 pi+ D0bar pi- -> K- pi+ pi+ k+ pi- pi- (beam momentum = 7.618268 GeV/c and just above at 8.0 GeV/c).

After that, I had a look on particle tracks in the eventDisplay window and observed that some unexpected particles like Deutron, Alpha, Triton, neutron, antineutron, muons, gammas are present there which I did not expected from EvtGenDirect by defining a decay file for particular decay.

To cross check for these additional particles, I created output.evt files using the same decay files then inside the output.evt file everything looks OK as I expected.

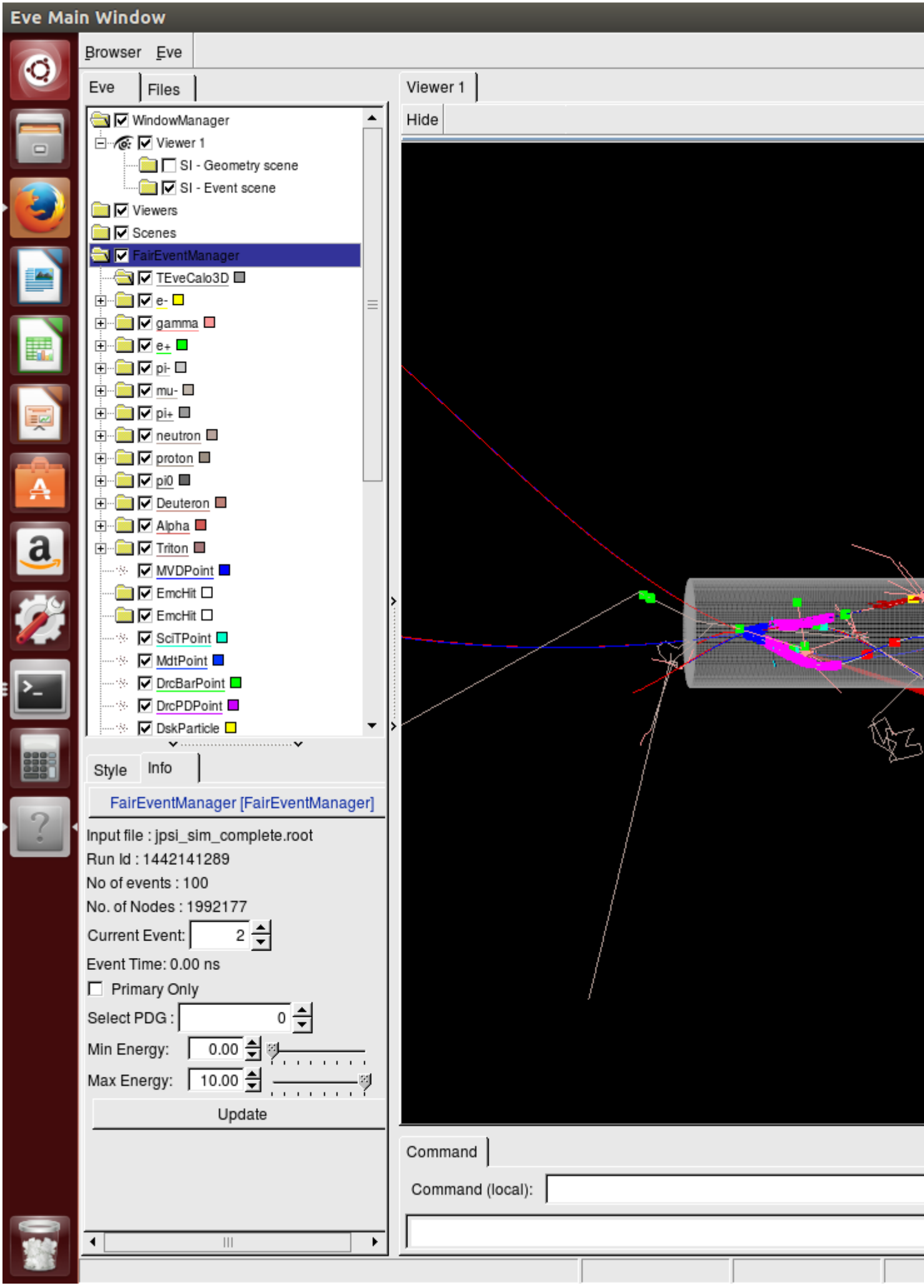
Is this behavior of EvtGenDirect is normal?
Will these additional particles harm the reconstruction of these decays?

Kindly help me in this regard.

I have attached simulation macros, decay files and snap shot of eventDisplay window.

File Attachments

1) sim_complete.C, downloaded 683 times
2) digi_complete.C, downloaded 653 times
3) recoideal_complete.C, downloaded 644 times
4) pid_complete.C, downloaded 644 times
5) jpsipi-pi+_e+e-.dec, downloaded 685 times
6) jpsi_pippim_output.evt, downloaded 679 times
7) SnapShot_EventDisplay.png, downloaded 1290 times


Eve Main Window
Browser
Eve
Eve
Files
WindowManager
Viewer 1
SI - Geometry scene
SI - Event scene
Viewers
Scenes
FairEventManager
TEveCalo3D
e-
gamma
e+
pi-
mu-
pi+
neutron
proton
pi0
Deuteron
Alpha
Triton
MVDPoint
EmcHit
EmcHit
SciTPoint
MdtPoint
DrcBarPoint
DrcPDPoint
DskParticle
Style
Info
FairEventManager [FairEventManager]
Input file : jpsi_sim_complete.root
Run Id : 1442141289
No of events : 100
No. of Nodes : 1992177
Current Event:
2
Event Time: 0.00 ns
Primary Only
Select PDG :
0
Min Energy:
0.00
Max Energy:
10.00
Update
Viewer 1
Hide
Command
Command (local):

Subject: Re: Unexpected particles in Event Display window.
Posted by StefanoSpataro on Sun, 13 Sep 2015 17:17:45 GMT
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Dear Ajay,
those are secondary particles created by the interaction of primaries with materials. Everything under control.

Subject: Re: Unexpected particles in Event Display window.
Posted by Ajay Kumar on Mon, 14 Sep 2015 05:04:54 GMT
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Dear Stefano,

Thank you for your quick reply.

With Regards

Ajay