
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.

$p\bar{p} \rightarrow J/\psi \pi^+ \pi^- \rightarrow e^+ e^- \pi^+ \pi^-$ (beam momentum = 5.049089 GeV/c and just above at 6.0 GeV/c).

$p\bar{p} \rightarrow D^{*+} D^{*-} \rightarrow D^0 \pi^+ D^0 \pi^- \rightarrow K^- \pi^+ \pi^+ k^+ \pi^- \pi^-$ (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 Deuteron, Alpha, Triton, neutron, antineutron, muons, gammas are present there which I did not expect 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 603 times
- 2) [digi_complete.C](#), downloaded 581 times
- 3) [recoideal_complete.C](#), downloaded 581 times
- 4) [pid_complete.C](#), downloaded 582 times
- 5) [jpsipi-pi+_e+e-.dec](#), downloaded 619 times
- 6) [jpsi_pippim_output.evt](#), downloaded 614 times
- 7) [SnapShot_EventDisplay.png](#), downloaded 1094 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

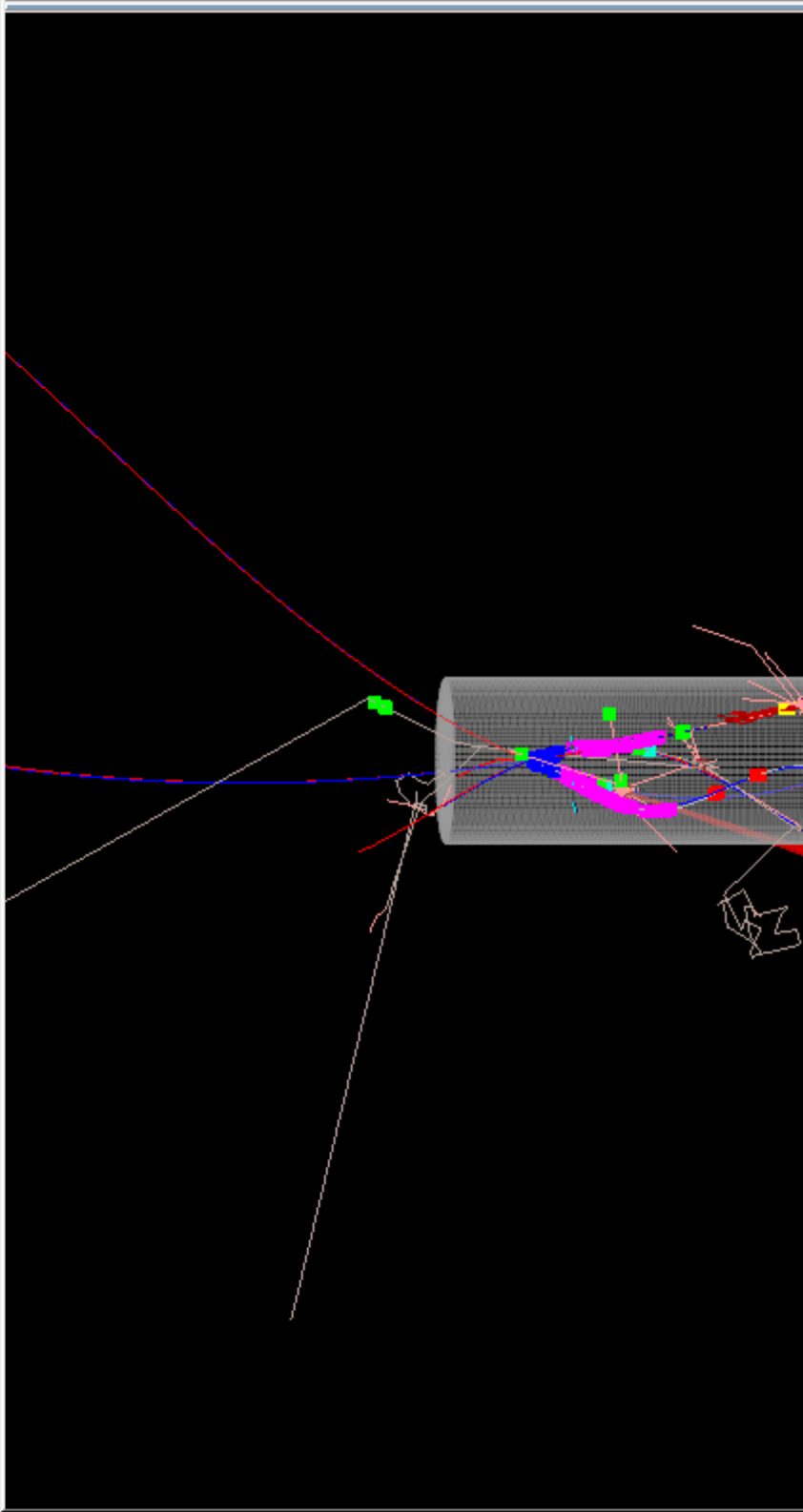
Style Info

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):

Input field for commands