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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.

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### File Attachments

- 1) [sim\\_complete.C](#), downloaded 626 times
- 2) [digi\\_complete.C](#), downloaded 591 times
- 3) [recoideal\\_complete.C](#), downloaded 593 times
- 4) [pid\\_complete.C](#), downloaded 593 times
- 5) [jpsipi-pi+\\_e+e-.dec](#), downloaded 628 times
- 6) [jpsi\\_pippim\\_output.evt](#), downloaded 623 times
- 7) [SnapShot\\_EventDisplay.png](#), downloaded 1128 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

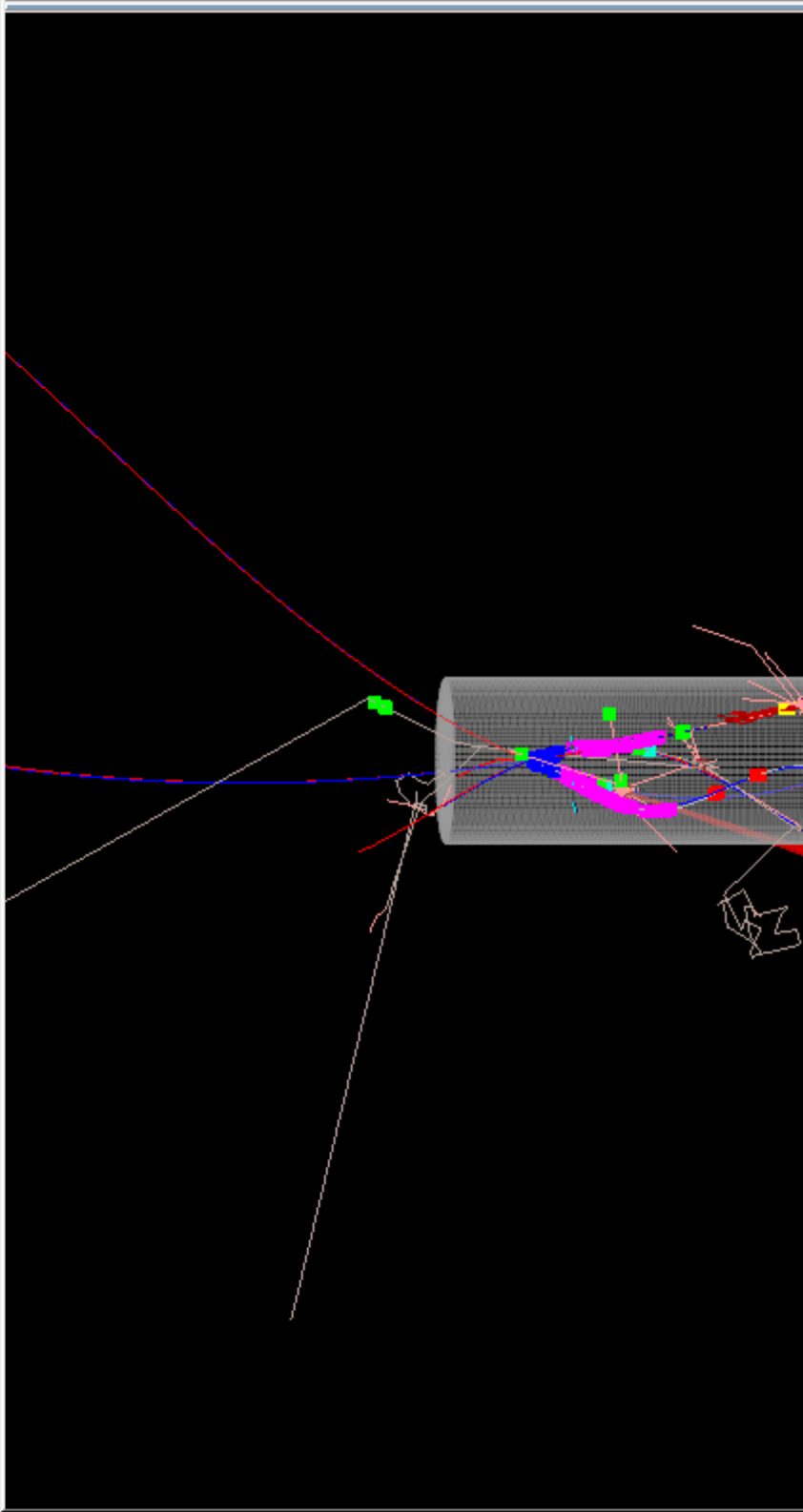
Style Info

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