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 551 times
2) digi_complete.C, downloaded 529 times
3) recoideal_complete.C, downloaded 532 times
4) pid_complete.C, downloaded 523 times
5) jpsipi-pi+_e+e-.dec, downloaded 566 times
6) jpsi_pippim_output.evt, downloaded 565 times
7) SnapShot_EventDisplay.png, downloaded 881 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]
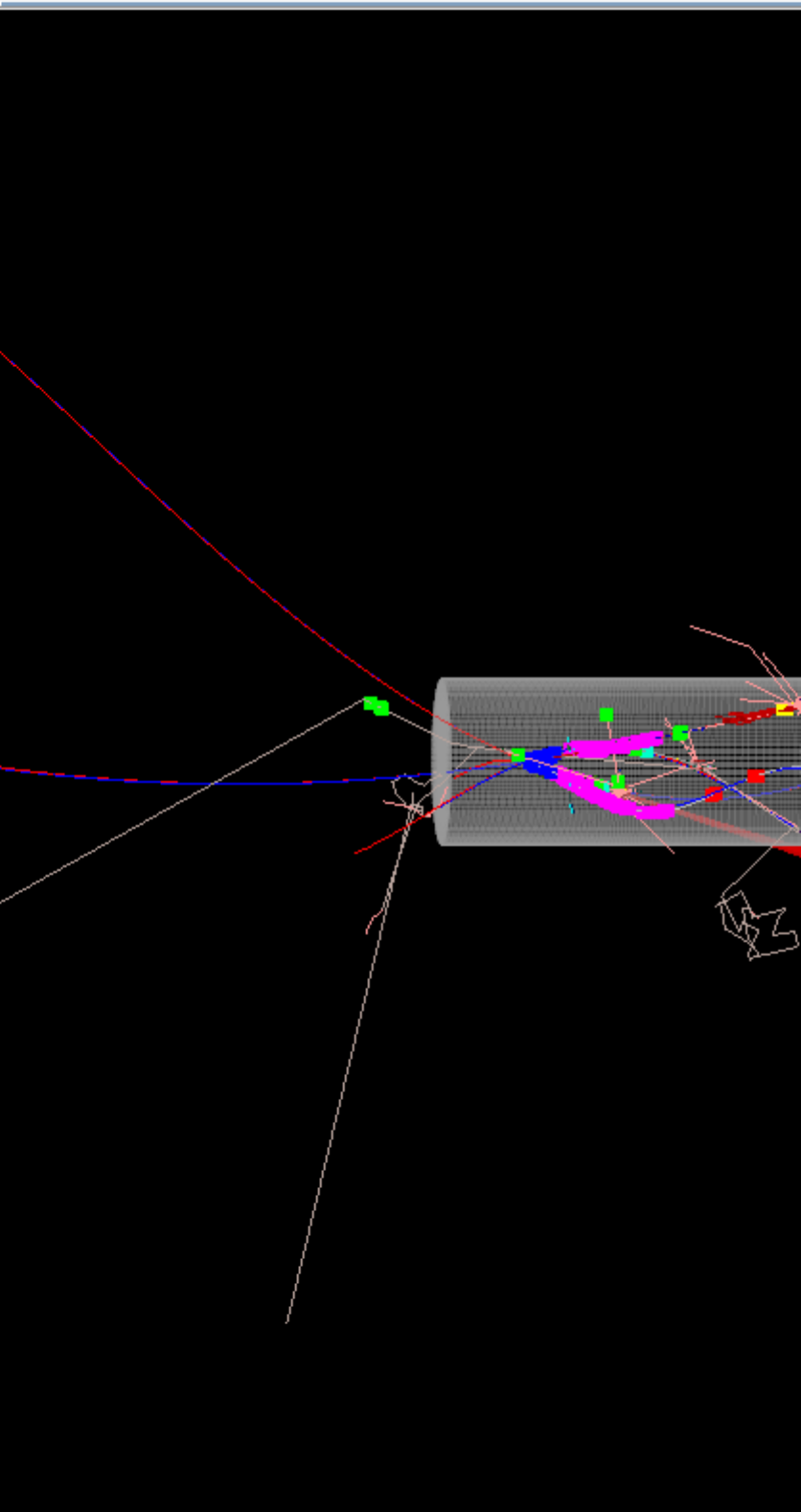
Event Time: 0.00 ns

☐ 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

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

Dear Stefano,

Thank you for your quick reply.

With Regards

Ajay