
Subject: [FIXED] TGeant4 Error with pbarpSystem
Posted by [Andreas Pitka](#) on Mon, 29 Apr 2013 11:45:51 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

when running my simulation macro (revision 19539) i get the following error when using Geant4:

```
TG4PrimaryGeneratorAction::TransformPrimaries:  
G4ParticleTable::FindParticle() failed for XXX pdgEncoding=88888.  
*** TG4Exception: Aborting execution ***
```

seems like the pbarpSystem is not defined.

With Geant3 everything is working properly.

Best regards and thanks a lot

Andreas

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Stefano Spataro](#) on Mon, 29 Apr 2013 11:59:22 GMT
[View Forum Message](#) <> [Reply to Message](#)

Which input are you using for the simulation?

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Andreas Pitka](#) on Mon, 29 Apr 2013 12:30:56 GMT
[View Forum Message](#) <> [Reply to Message](#)

I am using this decay File:

```
noPhotos  
Decay pbarpSystem  
1.0 psi(3770) PHSP;  
Enddecay
```

```
Decay psi(3770)  
1.0 D0 anti-D0 PHSP;  
Enddecay
```

```
Decay anti-D0  
1.0 K+ pi- PHSP;  
Enddecay
```

```
Decay D0  
1.0 K_S0 pi+ pi- PHSP;  
Enddecay
```

End

On my machine the error is reproducible with this decay file using the sim_complete.C in macro/run and the PndEvtGenDirect at the Psi(3770) mass.

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Stefano Spataro](#) on Mon, 29 Apr 2013 12:35:11 GMT
[View Forum Message](#) <> [Reply to Message](#)

In your sim_complete EvtGen->SetStoreTree(XXX) is kTRUE or kFALSE?

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Andreas Pitka](#) on Mon, 29 Apr 2013 12:38:14 GMT
[View Forum Message](#) <> [Reply to Message](#)

its set to kTRUE

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Stefano Spataro](#) on Mon, 29 Apr 2013 12:39:53 GMT
[View Forum Message](#) <> [Reply to Message](#)

Do you have the same problem with kFALSE?

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Andreas Pitka](#) on Mon, 29 Apr 2013 12:45:53 GMT
[View Forum Message](#) <> [Reply to Message](#)

With SetStoreTree set to kFALSE its running properly.

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Klaus Götzen](#) on Mon, 29 Apr 2013 14:26:19 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

the following part of your decay file looks strange for me:

```
Decay pbarpSystem
1.0 psi(3770) PHSP;
Enddecay
```

Could you try again running the simulation with psi(2S) as initial resonance instead of pbarpSystem?

Cheers,
Klaus

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Andreas Pitka](#) on Thu, 02 May 2013 12:55:59 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

i changed the decay file to

noPhotos

Decay psi(3770)
1.0 D0 anti-D0 PHSP;
Enddecay

Decay anti-D0
1.0 K+ pi- PHSP;
Enddecay

Decay D0
1.0 K_S0 pi+ pi- PHSP;
Enddecay

End

now the error is(its still only crashing with TGeant4):

```
TG4PrimaryGeneratorAction::TransformPrimaries:  
G4ParticleTable::FindParticle() failed for XXX pdgEncoding=40443.  
*** TG4Exception: Aborting execution ***
```

40443 is the pdg code of the psi(3770).

best regards

Andreas

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Ralf Kliemt](#) on Thu, 02 May 2013 13:10:12 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

EvtGen has its own description of particles in the EvtGen/evt.pdl file. This mostly matches the root particle description (most probably used in Geant4) defined in fairsoft/etc/pdg_table.txt. The Psi(2S) for example has the pdgcode and name (30443,"psi(2S)) in EvtGen and (100443,"psi") in root. Same holds for the psi(3770). The pbarpSystem is even not defined in root.

Geant3 is not so picky about the particle tree, as it tells you the error/warning "can be safely ignored". These particles are not tracked - so why bothering.

To put a particle definition to the TDatabasePDG you may use:

```
TDatabasePDG::Instance()->AddParticle(...)
```

Just put it to the macro before FairRun::Run() and your initial system (also pbarp if you like) will be present.

I have the converter from Rho ready in the banks.

However, I think adjusting EvtGen to use the root pdg table would be advisable: one list only.

Cheers.
Ralf

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Stefano Spataro](#) on Thu, 02 May 2013 13:51:38 GMT
[View Forum Message](#) <> [Reply to Message](#)

Still I do not understand why Geant4 is processing particles which should not be processed, and which are not processed by Geant3 as it should be. Maybe there are some problems in the SetStoreTree implementation in the PndEvtGenDirect?

Subject: Re: TGeant4 Error with pbarpSystem
Posted by [Stefano Spataro](#) on Thu, 16 Jan 2014 16:07:22 GMT
[View Forum Message](#) <> [Reply to Message](#)

This problem should be fixed now, thanks to Mohammad, you can run geant4 w/o crashes. If you see something strange please report.
