
Subject: gphysi.dat

Posted by [Markus Moritz](#) on Mon, 09 Jul 2018 12:45:05 GMT

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I have a very basic question. What is the gphysi.dat file telling me?

As i understand, it is some kind of log file of a GEANT3 simulation.

I am wondering about this, because after a (hopefully) GEANT4 simulation it is created as well. Inside it is written somewhere "IPAIR= 0."

This would mean pair production switched off.

Subject: Re: gphysi.dat

Posted by [Stefano Spataro](#) on Mon, 09 Jul 2018 12:47:45 GMT

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The gphysi.dat is providing the Geant3 parameters which were used in the simulation, then IPAIR=0 means there it no pair production,

BUT

you are using geant4 simulation, which does not produce any .dat file. In your case, for reconstruction you use geane for track extrapolation (genfit, pid package), which is a sort of geant3 simulation which has only the electromagnetic part to consider energy loss, no pair production, no decays, no hadronic interaction and so on. This is what you are reading in the .dat file, most probably a Geane constructor is called and the .dat file is created.

Try to do a short geant3 simulation and check if the parameters are changed, they should be. Then, the final answer is: all those zeros are correct.

How they are set? Check gconfig folder. SetCuts.C shows the default parameters for simulation, Geane.C are the parameters for Geane. You can edit them without need of recompilation, but afterwards set them at the original values, if not your sim will be screwed.

Subject: Re: gphysi.dat

Posted by [Markus Moritz](#) on Tue, 10 Jul 2018 09:11:29 GMT

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Hello Stefano,

if i run a GEANT4 or GEANT3 simulation within PANDARoot dec17p2b out of box via using:

```
void my_sim(.....SimEngine= 'TGeant4')
```

or

```
void my_sim(.....SimEngine= 'TGeant3')
```

a new gphysi.dat will always be written.

What changes is only the date/time statement in the header of that file.

The SetCuts.C file looks fine for me:

```
gMC->SetProcess("PAIR",1);
```

This brings me to the conclusion to ignore the gphysi.dat file.
