Subject: new FTF generator in pandaroot
Posted by Aida Galoyan on Thu, 04 Sep 2014 15:06:31 GMT
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Hi all,

I have implemented new generator FTF of Geant4 in PandaRoot
in directory trunk/pgenerators.
FTF can generate Pbar-P, Pbar-Nucleus, light Anti-nucleus-Nucleus,
Hyperon-P, Hyperon-Nucleus interactions at wide energy range
from 100 MeV to 1000 GeV.

FTF is based on ideas of DPM and extended them on Pbar-Nucleus interactions.
It works faster than UrQMD.

For FTF generator, I created sub-directory FtfEvtGen similar to DpmEvtGen.

Some words, about FTF run.

At first, you need to compile FTF.
For this, in the folder pgenerators/FtfEvtGen give a command:
> make -f FTFmake

You will obtain FTFGen executable file.

For generation of Pbar-P events, you have to use file PbarP.mac .
In the file PbarP.mac, you need to set

after line
#events
Number of Events

after line
#Plab(GeV/c)
Momentum of projectile antiproton

Then, you give command
> ./FTFGen PbarP.mac

and will obtain FTF.root file with Root-Tree, where all
information about produced particles is presented.

For generation of Pbar-A events, you can use PbarA.mac.
You need to insert some values there.
First of all, Geant4 name of material - G4_Name, for example,
for carbon - G4_C, for gold - G4_Au, for cupper -G4_Cu and so on,

after line
#material
G4_Name

after line
#targetA
mass number of target nucleus

after line
#generator
ftfp or ftfb

after line
#events
 Number of Events

 after line
#Plab(GeV/c)
Momentum of projectile antiproton

"ftfp" is combination of FTF generator and simple generator Preco
 for low particles proceeding in nucleus.
"ftfb" is composition of FTF generator and Binary Cascade model of Geant4.
"ftfp" works faster, but "ftfb" gives more correct information about
evaporated nucleons.
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Next command must be
> ./FTFGen PbarA.mac

After run, you will obtain "FTF.root" file with all information in the Root-Tree.
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We can apply "FTF.root" for future simulation in PandaRoot,
using class PndFtfGenerator similar to PndDpmGenerator.

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Information about FTF run is also presented in the file
pgenerators/FtfEvtGen/README.txt .
If you have questions about FTF, please, write me.
Good luck
Aida