Subject: improvement of DPM
Posted by Aida Galoyan on Tue, 07 Feb 2012 08:44:59 GMT
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Hi all,

I have introduced some changes in generator DPM according to our last disscusions with Luminosity and Tracking groups.

In particular, I have improved ratio between cross sections: elastic, inelastic, total.

In the new external packages, fortran compilator "g77" is removed, "gfortran" is used now. Therefore, I have changed the file /DpmEvtGen/common.mk to have a possibility to compile (make or gmake) and run DPMGen within DpmEvtGen directory, as earlier it was possible.

At the translation from "gfortran" to "g77", many warnings are appeared. So, I inserted some improvements in fortran codes to reduce the warnings.

With regards,
Aida

Subject: Re: improvement of DPM
Posted by Mohammad Al-Turany on Wed, 08 Feb 2012 11:14:40 GMT
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Hallo Aida,

After your changes the DpmEvtGen was not compiling anymore:

http://cdash.gsi.de/CDash/viewUpdate.php?buildid=823

this because you change the name of a subroutine from:

subroutine DPM_GEN(Pluto, Seed)

To:

subroutine DPMGEN(Pluto, Seed)

Was there any reason for that? I change it back now!

regards,

Mohammad

Subject: Re: improvement of DPM
Posted by Felix Boehmer on Wed, 08 Feb 2012 12:07:35 GMT
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Hi Mohammad,

I can very dimly remember some discussion about problems of gfortran with underscores when ubuntu switched from g77 to gfortran ... maybe that's it?

Cheers

Felix

Subject: Re: improvement of DPM
Posted by Mohammad Al-Turany on Wed, 08 Feb 2012 13:38:39 GMT
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HI Felix,

This has to do with underscore at the end of name not in the middle.

Cheers,

Mohammad

Subject: Re: improvement of DPM
Posted by Aida Galoyan on Wed, 08 Feb 2012 21:17:39 GMT
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Hi Mohammad,

Felix is right.

I replaced DPM_GEN on DPMGEN, because
when we called subroutine dpm_gen() from DpmEvtGen/main.cc or from PndDpmDirect.cxx (created by you),
it was needed to put 2 underscores at the end: dpm_gen__().

How I remember, it can lead to problems, when we transfer from "g77" to "gfortran".
Therefore, I replace dpm_gen(x,x) on dpmgen(x,x) and now
compile without any errors.

When we use subroutine dpmgen(x,x) instead dpm_gen(x,x),
it is need to change call
dpm_gen__(x,x) to dpmgen_(x,x) (without middle underscore and second underscore at the end)
in the file pgenerators/PndDpmDirect.cxx.
I did it in the file DpmEvtGen/main.cc .

I think, in the case, everythink will be normal.

Aida

Subject: Re: improvement of DPM
Posted by Aida Galoyan on Fri, 02 Mar 2012 14:59:36 GMT
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Hi all,

I have changed parameterizations of hadron elastic and total
cross-sections in DPM generator according to our last paper:
"Antinucleus-nucleus cross sections implemented in Geant4"
Phys.Lett.B705:235-239,2011.

Aida

Subject: Re: improvement of DPM
Posted by Aida Galoyan on Mon, 04 Jun 2012 14:22:34 GMT
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Hi all,

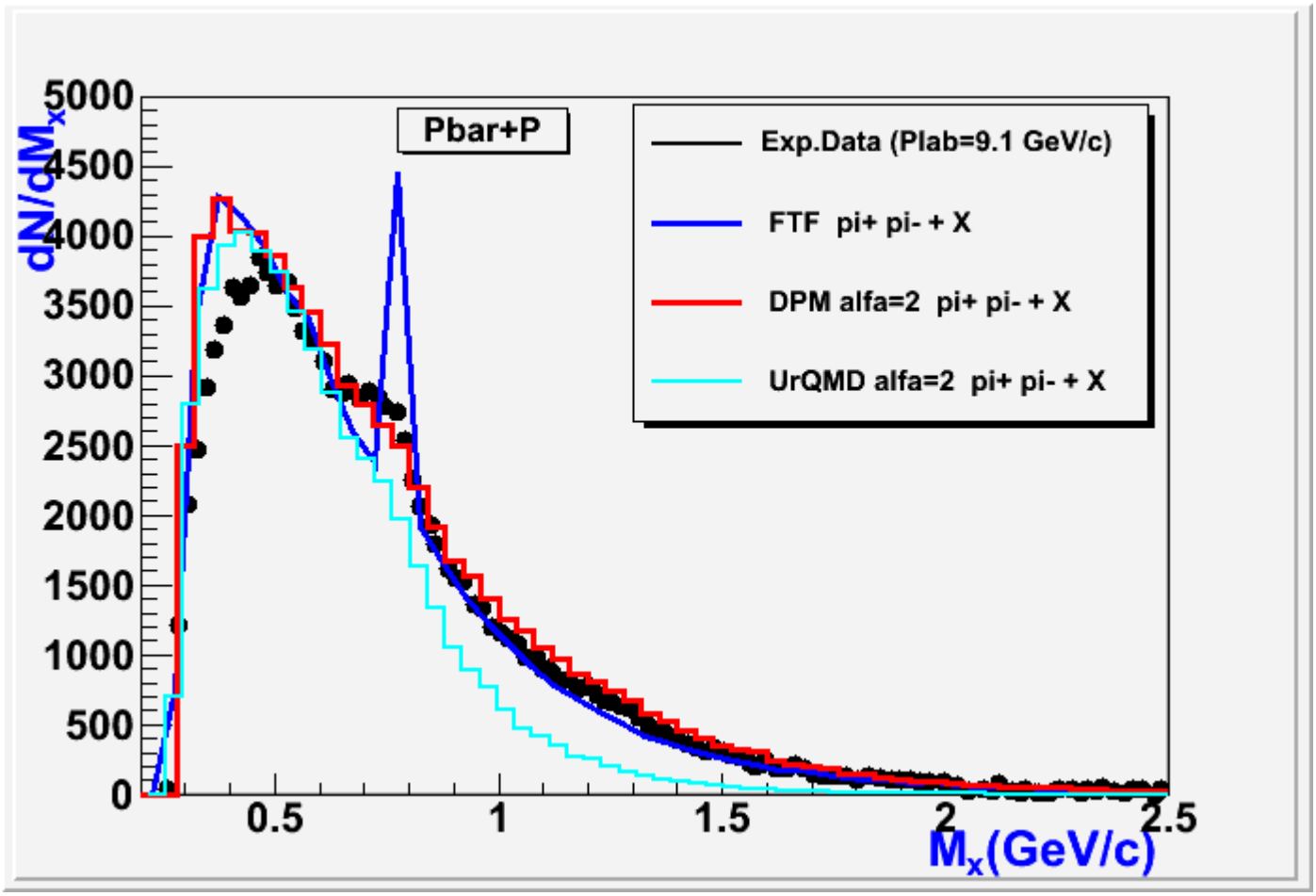
I have improved pi+pi- mass distribution in DPM.
For this, quark mass distribution is improved, and
production of f2 meson is added for the first time
in DPM generator.

I attached fig., where pi+pi- mass distributions for
pbar-p annihilation events at Plab=9.1 GeV/c are
calculated by new version of DPM, model FTF in GEANT4
and UrQMD+SMM model.

As you can see, calculations by DPM reproduce exp. data given
by points better than other models.

Aida

File Attachments
1) an_DPMFTF.gif, downloaded 967 times


Pbar+P
Exp.Data (Plab=9.1 GeV/c)
FTF pi+ pi- + X
DPM alfa=2 pi+ pi- + X
UrQMD alfa=2 pi+ pi- + X
dN/dM$_x$
M$_x$(GeV/c)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0.5
1
1.5
2
2.5