
Subject: Re: New DPMgen results disagree with earlier simulations

Posted by [Aida Galoyan](#) on Fri, 05 Feb 2010 17:37:21 GMT

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Hi all,

When I installed version of DPM with Coulomb, I wrote
(message# 9312 in General)

>>>>

I have committed new version of DPM generator.

Full elastic scattering, Coulomb, interference, hadronic parts are included in the new DPM.

You need to put the minimal angle of scattering `"tetmin"(>0)` at DPM running, if you give value of parameter

`"Elastic" = 1` (Inelastic with Elastic scatterings)

or `= 2` (only Elastic scatterings).

The implementation of full elastic scattering in DPM is important for Luminosity monitoring and, may be, for estimation of radiation doses in MVD.

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How I remember, Mohammad also wrote for new `PndDpmDirect`, if you choose `Elastic = 1` or `=2`, you need to put `tetmin > 0`.

The calculations at `Elastic 1` or `2` (with Elastic scattering) at `tetmin = 0` are wrong, because Coulomb scattering go to infinity at `tetmin=0`.

If you want to choose `tetmin` for your detector (TPC) make some calculations with simulation of only elastic scattering

(`Elastic =2`) with various values of `tetmin`. There will be a lot of recoil protons from Coulomb scattering (at small `tetmin`), but most of them will have low energies and, I think, they will be absorbed by beam pipe or MVD. Only protons at large `tetmin` will fall in your Detector, because they can penetrate beam pipe and MVD.

`Tetmin` determines relation between elastic and inelastic events. At increasing `tetmin`, the Coulomb part of elastic scattering decreases sharply, and number of inelastic events increases.

Best regards,
Aida