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Subject: Re: DPM theta cut off

Posted by [Simone Bianco](#) on Wed, 29 Aug 2012 09:28:31 GMT

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Dear Donghee,

the work of Thomas and the results of some discussions of one year ago about the theta\_min parameter were included in the PndDpmDirect class.

Johan introduced the parametrization of theta\_min in the implementation of the ctor PndDpmDirect::PndDpmDirect(Double\_t Mom, Int\_t Mode, Long\_t Seed):

```
PndDpmDirect::PndDpmDirect(Double_t Mom, Int_t Mode, Long_t Seed) {  
  
    //  
    // Calculate ThtMin first. For this we make a cut-off on the value of -t of 1e-2 GeV^2 (~100  
    MeV/c momentum)  
    // This estimated from a parametrization found in thesis of Thomas Wuerschig (figure 6.4, page  
    121):  
    // Roughly: 0.4 deg at 15 GeV/c and 4 deg at 1.5 GeV/c, linear interpolation in double  
    log-scale.  
    //  
  
    Double_t logangle =  
    TMath::Log(0.4)+(TMath::Log(15.)-TMath::Log(Mom))*(TMath::Log(4)-TMath::Log(0.4))/(TMath  
    ::Log(15)-TMath::Log(1.5));  
    Double_t ThtMin = TMath::Exp(logangle);  
  
    PndDpmDirect(Mom, Mode, Seed, ThtMin) ;  
}
```

so if you use this ctor you don't need to calculate by hands a value for theta\_min, since this is automatically obtained as a function of the beam momentum.

I hope this helps.

Cheers,

Simone

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