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Subject: Re: GEM tracking

Posted by [Radoslaw Karabowicz](#) on Thu, 30 Apr 2009 09:55:32 GMT

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Problem continues...

It seems that my yesterday enthusiastic mail was a bit preliminary.

I have been looking at several tracks at it looked rather ok, however when I look systematically into the results I have realised that the fitting is still producing not optimal results.

As you may remember, I was giving to the Kalman fitter a Monte Carlo momentum increased by 100MeV/c as a starting value. What I have realized is that the fitter smears the momentum with some sigma, but the reconstructed mean momentum value of many tracks still differs from the MC momenta by a value of 100MeV/c.

I have therefore made two runs of my reconstruction, once with having the start momenta given to Kalman decreased by .5 GeV/c as compared to MC truth, and in the second run I set start momenta as MC truth plus .5 GeV/c. Plots below summarize the results:

Momenta decreased:

```
StartMom.SetMagThetaPhi(beforeMom.Mag()-0.5,  
    beforeMom.Theta(),  
    beforeMom.Phi());
```

Momenta increased:

```
StartMom.SetMagThetaPhi(beforeMom.Mag()+0.5,  
    beforeMom.Theta(),  
    beforeMom.Phi());
```

Please take a look at the mean value of the distribution, the reco momenta is just smeared, it doesn't come back to MC truth:(.

The next thing I am planing to do is to use the tracks with high p<sub>t</sub>. But that will come probably the next week.

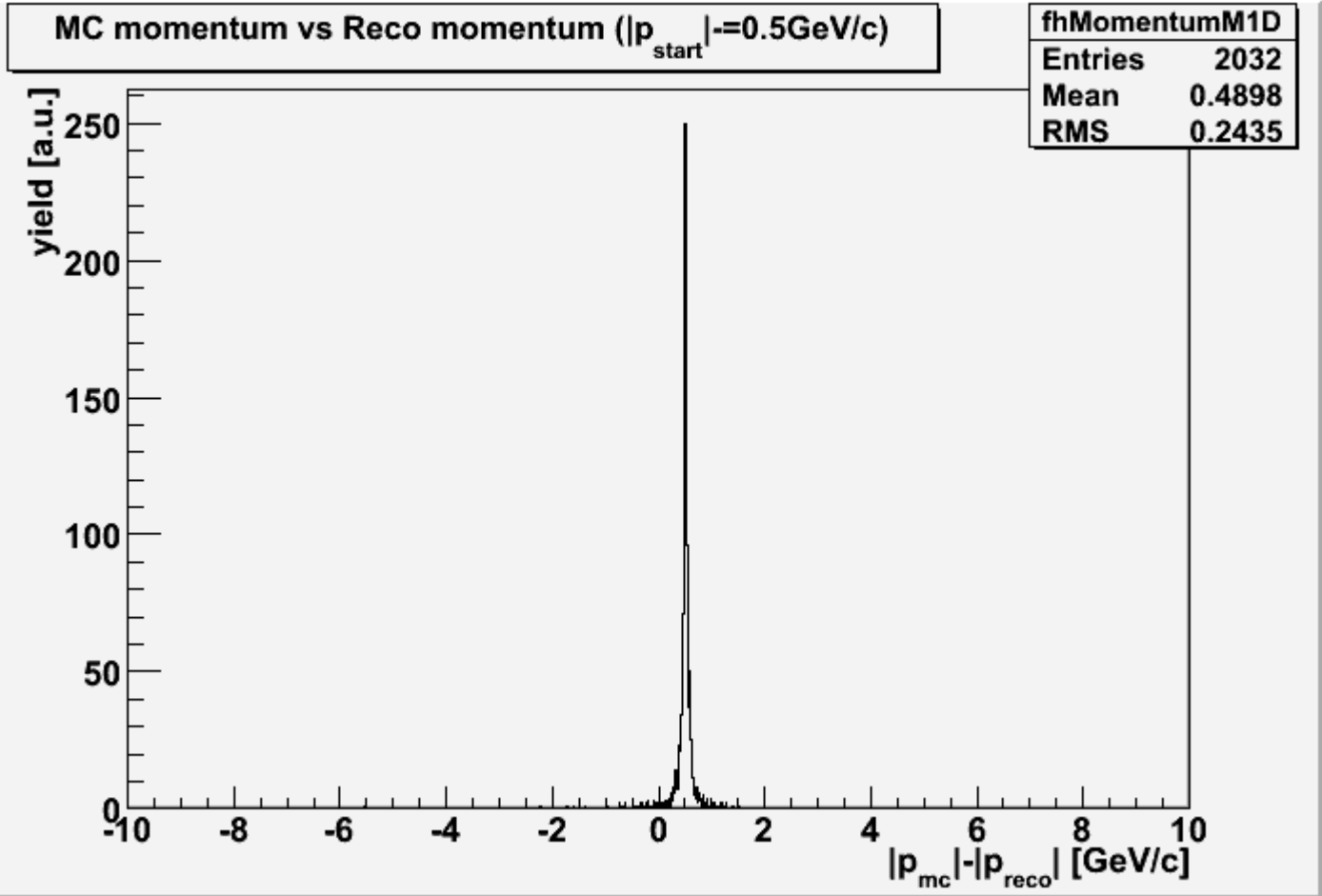
yours,  
radek

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### File Attachments

1) [momDiff\\_m5.gif](#), downloaded 574 times

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2) [momDiff\\_p5.gif](#), downloaded 587 times

