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Subject: Re: Momentum resolution and reconstruction efficiency of LHE tracking  
Posted by [David Pohl](#) on Thu, 11 Feb 2010 13:22:31 GMT

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hi Stefano,

I did the simulation again with your changes. In the region between 150-350 MeV/c the reconstruction efficiency is much better:

STT reco efficiency with and without helix fit

Ok, if you say that the reconstruction efficiency is that bad due to the higher energy loss in the low momentum region I can understand this. The helix should look more like a spiral and this leads Lhe to fail, right?

But the other thing is how to identify if a track fit is good. When you look at the third picture in my first post,

you can see that I have a lot of background (error > 3 sigma, 40% events). These events cannot be used for PID.

I thought that the Chi square of a PndTrack should be a good indication for the goodness of the momentum

resolution but sadly the values are not correlated:

Chi Square, p is transverse momentum

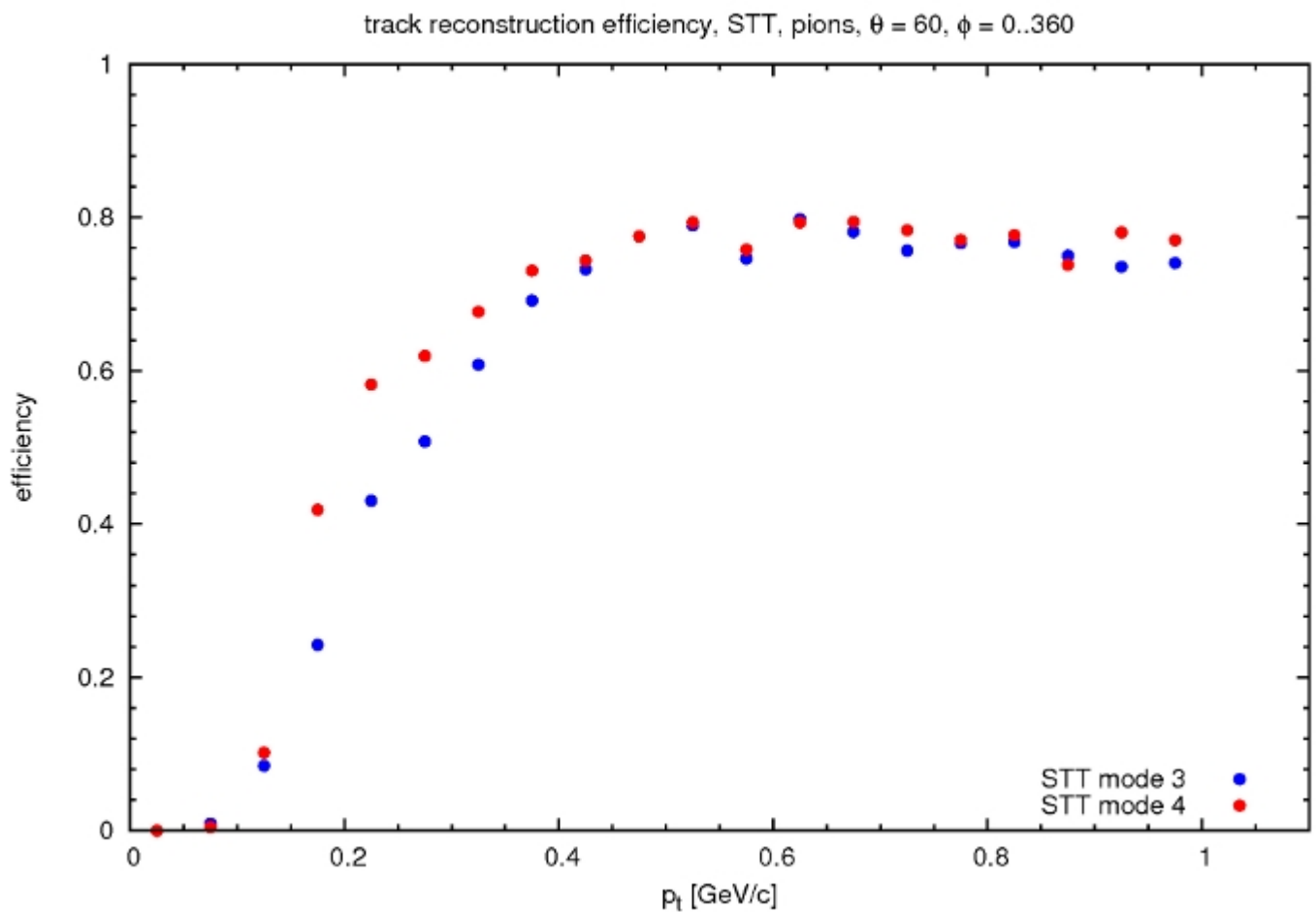
greetings,  
David

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### File Attachments

1) [EfficiencyComparison.jpg](#), downloaded 831 times

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2) [chi2.jpg](#), downloaded 906 times

