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Subject: Test of muon momentum resolution with Jan14 release

Posted by [binsong](#) on Wed, 12 Feb 2014 16:54:22 GMT

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Dear all,

I have checked the momentum resolution of muon for two angles with the new release ( $p = 1\text{ GeV}/c$ ,  $\theta = 15^\circ$  and  $\theta = 60^\circ$ ).

the result at Barrel region is normal,  $\Delta p/p = 1.56\%$ , comparable to the result from TDR.

But, for the Forward region, I found  $\Delta p/p = 2.1\%$ , very different from the TDR result which is about 1.5%.

Then, I also checked them with the apr13 release, both of them seem correct.

Has anyone some idea, why the momentum resolution in forward between apr13 and jan14 changes a lot?

Binsong

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Subject: Re: Test of muon momentum resolution with Jan14 release

Posted by [Susanna Costanza](#) on Mon, 17 Feb 2014 10:17:43 GMT

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Dear Binsong,

I've downloaded the jan14 release and I simulated two sets of 1000 events with a momentum of  $1\text{ GeV}/c$ ; one set was generated at  $\theta = 15^\circ$  and the other one at  $\theta = 60^\circ$ .

For both data sets, I obtain nearly the same resolution: 1.60% at  $15^\circ$  and 1.62% at  $60^\circ$ , as shown in the plot attached.

So I don't see any difference with respect to the TDR results.

Are you using the macros in the macro/run directory?

Cheers,

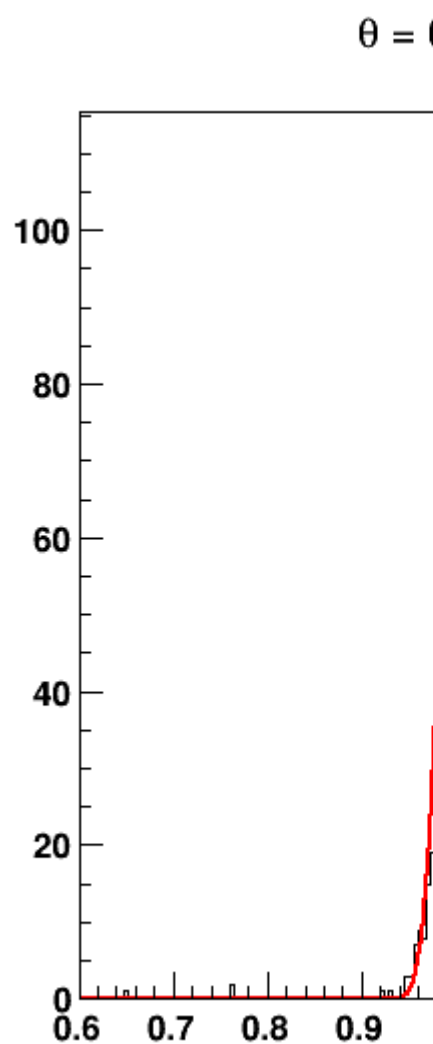
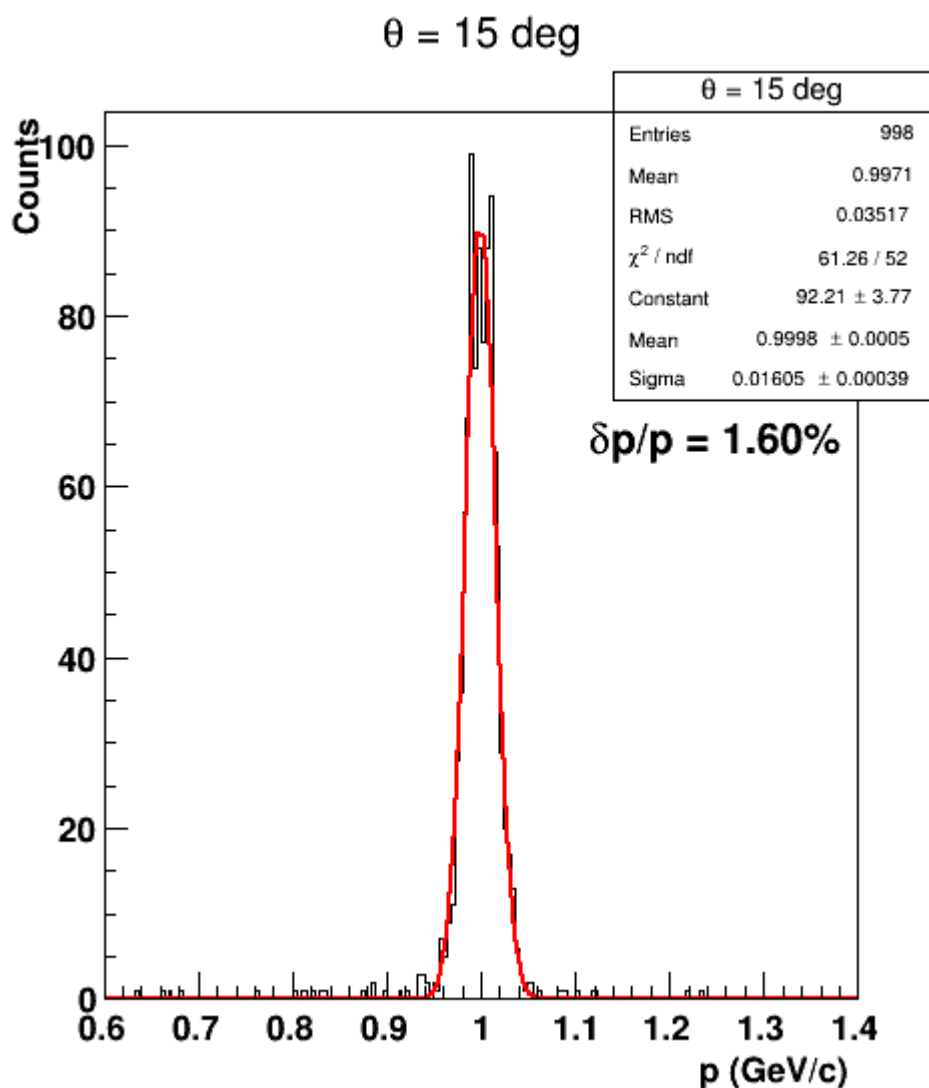
Susanna

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### File Attachments

1) [resolution\\_1GeV.png](#), downloaded 399 times

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Subject: Re: Test of muon momentum resolution with Jan14 release

Posted by [binsong](#) on Mon, 17 Feb 2014 12:32:14 GMT

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hi Susanna,

Thanks for your answer. The revision I used is 23659, external package is dec13, and the macro in macro/run.

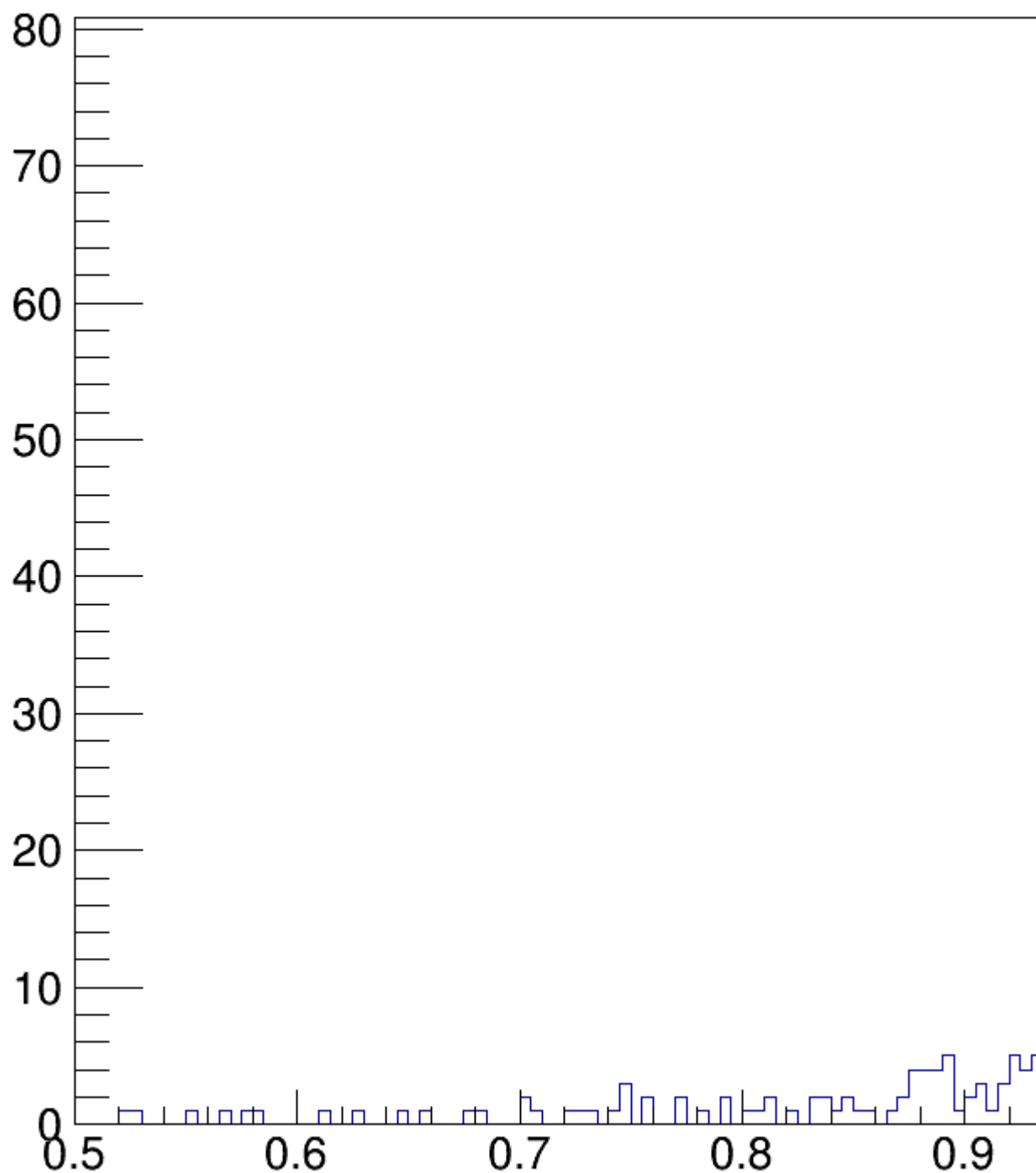
But the result for 15deg is different with yours.

My  $\delta p / p$  is 2.2%.

Cheers

## File Attachments

1) [mom\\_mu\\_15deg.png](#), downloaded 399 times



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Subject: Re: Test of muon momentum resolution with Jan14 release  
Posted by [Susanna Costanza](#) on Mon, 17 Feb 2014 12:43:21 GMT

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I'm still using the apr13 release of the external packages.  
I'll install the dec13 release and I'll let you know if/how my results change.

Susanna

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Subject: Re: Test of muon momentum resolution with Jan14 release  
Posted by [Stefano Spataro](#) on Mon, 17 Feb 2014 15:29:38 GMT  
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Hi,  
why are you using dec13? It was never announced since it has bugs inside, in this case geane is not working properly.  
Please try again with apr13 externals.

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