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Subject: Bremsstrahlung and neutrals mergeing  
Posted by [Klaus Götzen](#) on Tue, 06 May 2014 12:18:53 GMT  
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Hi all,

I just wanted to inform you that I implemented a neutral (cluster) mergeing and bremsstrahlung losses for electrons in the Fast Sim in trunk and scrut14. As default these features are switched off and have to be enabled in the fast sim macro with

```
// enable the merging of neutrals if they have similar direction  
fastSim->MergeNeutralClusters();
```

```
// enable bremsstahlung loss for electrons  
fastSim->EnableElectronBremsstrahlung();
```

The parametrization for the cluster mergeing was motivated by Ronalds talk (see [https://panda-wiki.gsi.de/foswiki/pub/Computing/Minutes28April2014/evo14\\_0428RK.pdf](https://panda-wiki.gsi.de/foswiki/pub/Computing/Minutes28April2014/evo14_0428RK.pdf)) to roughly match the efficiency on page 11.

The following plot shows the  $J/\psi \rightarrow e^+ e^-$  mass distribution (from  $\psi' \rightarrow J/\psi \pi^+ \pi^-$  events) without (blue) and with (red) bremsstrahlung:

This plot shows the  $\pi^0$  reco efficiency depending on the opening angle (here from  $p\text{bar}p \rightarrow \pi^+ \pi^- \pi^0$  events):

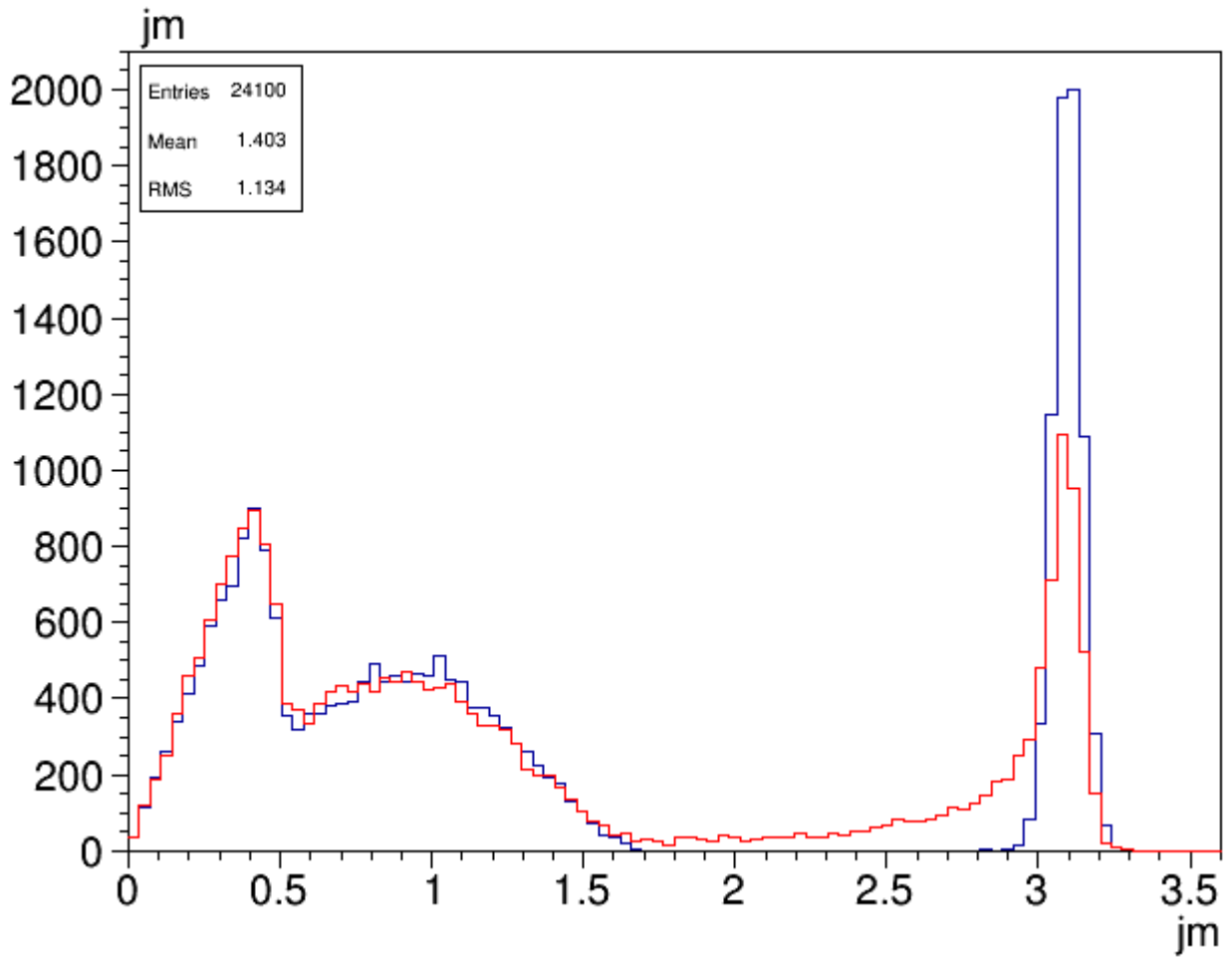
You might give it a try and check, whether it behaves like expected. In case of your positive feedback we can also enable the features as default.

Best,  
Klaus

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### File Attachments

1) [j2e\\_brems.gif](#), downloaded 1582 times



2) [pi0\\_merge.gif](#), downloaded 1370 times

