Subject: Problems with new GEM Geometry
Posted by Tobias Stockmanns on Tue, 17 Apr 2018 09:22:25 GMT

Dear PandaRooters and GEM experts,

in the analysis of the reaction: pbar p -> Xi Xibar pi pibar -> 3 pi 3 pibar p pbar we see a significant drop in the reconstruction efficiency depending on the GEM geometry we use. With the old geometry (gem_3Stations_Tube.root) we get 18.3% (15.2% MCTruth matched) of reconstructable events with all final state particles in the event, while with the new geometry (gem_3Stations_realistic_v2.root) this value drops to 6.4% (4.3% MCTruth matched).

It is not clear if this is a real effect of the additional material introduced by the more realistic description of the GEMs or if there is still a bug in the geometry description which causes the drop of a factor 3.

It would be great if an expert on the GEMs could have a look.

Cheers,

Tobias

Subject: Re: Problems with new GEM Geometry
Posted by StefanoSpataro on Tue, 17 Apr 2018 09:28:43 GMT

Something similar happened several years ago, when the geometry of one GEM plane was shifted a bit, and the corresponding recohits were not properly updated (and the Kalman was not able to fit such wrongly placed hits).

Subject: Re: Problems with new GEM Geometry
Posted by Radoslaw Karabowicz on Tue, 17 Apr 2018 11:26:16 GMT

Hi there,

Does it happen only for this one specific channel?

I will have a look into the problem tomorrow.

yours
radek

Subject: Re: Problems with new GEM Geometry
Posted by Tobias Stockmanns on Tue, 17 Apr 2018 11:56:14 GMT

I cannot tell if it is only for this channel but I guess that this effect is there for all particles with long decay lengths like lambdas and cascades.