Subject: PndMicroWriter and pi0 reconstruction efficiency
Posted by Bertram Kopf on Mon, 02 Feb 2009 16:02:33 GMT
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Dear EMC and analysis experts,

as far as I can see in the code, the "PndMicroWriter" is responsible for the conversion of the reco objects to the TCandidate objects. The EmcCluster list is used here for the creation of the neutral candidates.
I simulated 1000 single pi0 events (momentum: 5 GeV/c) and analysed these events with rho. Here is the result for the invariant gamma gamma mass:

http://www.ep1.rub.de/~bertram/inv_gg_cluster.pdf

By using to the bump list as input in the "PndMicroWriter" I get the following result which looks definitely better:

http://www.ep1.rub.de/~bertram/inv_gg_bump.pdf

Therefore my questions:

1. Is the gamma gamma analysis for the Physics Book based on rho tools and on the standard "PndMicroWriter". If so than one can explain the efficiency drop for high pbar momenta since the cluster reconstruction and "not the bump splitting" has been used.

2. I don't see the place (neither in the reconstruction nor in the analysis part) where the gamma threshold of normally 10MeV or 20MeV has been applied. Did I overlook it somewhere?

3. In "PndMicroWriter" the EMC energy correction has been applied by using just a factor of 1.035. The cluster / bump object contains the method "GetEnergyCorrected()". Why is this method not used for the energy correction?

4. The objects "PndEmcRecoHit" are finally created in the standard emc reconstruction. Therefore I assume that this list should be the input for the rho analysis? Is this now a dummy which will be used in the future?

Best regards,
Bertram.