Subject: Re: Mass calculation from vector<PndEmcDigi*> in EMC
Posted by Bertram Kopf on Wed, 20 May 2009 09:58:18 GMT
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Dear Donghee,

thank you very much, Dima, for you explanation. Dima is right, it doesn't make sense to correct the invariant shower mass.

donghee wrote on Wed, 20 May 2009 08:53
Finally, I would like to show you a plot for electron, photon and proton event.
This plot shows a mass distribution of all EMC cluster.
You can see a electronic noise near 0 due to high energetic 15 GeV forward direction proton, second bump is exactly photon, and last bump is for electron. Because I have checked already last two bump corresponding photon and electron with comparing true MC info.
Unfortunately all electron is not located in the expected mass region.
I plot the mass with the unit in GeV scale, but I assume that the unit must be MeV, otherwise mass(e) = 0.511 MeV of electron cannot archive.

As Dima wrote, the invariant shower mass is a property which can be used to discriminate clusters from real photons and cluster which are created by two photons from pi0 decay. I think it doesn't make sense to distinguish photons, electrons and protons with a cut one the shower mass. As I mentioned it in one of my last postings: The first step is to do a matching between clusters and charged tracks which allows to distinguish between neutral and charged particles. After that one can start with the PID of charged particles where also the shower shape informations of the cluster are helpful properties.

Best regards,
Bertram.