Subject: Re: Mass calculation from vector<PndEmcDigi*> in EMC
Posted by donghee on Wed, 20 May 2009 06:53:40 GMT
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Dear Bertram,

I can clearly understand your explanation for the calculation of shower mass.
A question to what comes next is the mechanical construction of EMC. I think that a cluster is composed of few crystals, which connects with Front-End-Electronics. If it is correct, the concept of mass calculation can be easily understood.
Could you give me how is the EMC cluster built in current planning setup, in the level of crystals?

Second issue is the inconsistancy of mass function with comparing energy.
If I get the mass info from cluster, we need to correct the calculated mass as performed energy, as well.
Since deposit energy or energy loss can calibrate with GetEnergyCorrected() function, one has to apply same calibration to the mass calculation. But I think that is not considered.
I guess it is not possible to do with digi list.
After constructing the mass, the cluster mass will be corrected again.
If digi list can provide such process, than we need two different mass function with corrected energy and without correction.

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.
This is the reason why we need a correction for mass also.

Best wishes,
Donghee Kang

File Attachments

1) Cluster_mass.eps, downloaded 513 times