
Subject: Re: PndMicroWriter and pi0 reconstruction efficiency
Posted by [Bertram Kopf](#) on Mon, 02 Feb 2009 20:37:43 GMT
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Hi Stefano,

thank you very much for the prompt answer.

Quote:

Try to look at the parameter directory, in particular macro/params/emc.par (or all.par). In the container [PndEmcRecoPar] you can see that the energy cuts to build a cluster are set to 3 MeV (the units are GeV):

```
EnergyThresholdBarrel:d 3.0e-3  
EnergyThresholdFWD:d 3.0e-3  
EnergyThresholdBWD:d 3.0e-3  
EnergyThresholdShashlyk:d 8.0e-3
```

(8 MeV for the Shashlyk). This is a conservative threshold, at the moment the user should tune the energy cut for his analysis. For my old h_c plots I have always used 30 MeV, I think for gamma gamma analysis there are no cuts, simply the bumps with the highest energies are taken into account (but I have no deep insight on that analysis).

These are the typical single crystal thresholds. 3 MeV is roughly 3 sigma above the PWO crystal noise. I asked about the cluster or photon reconstruction threshold instead which is - as I already mentioned - usually 10-20 MeV for PWO. It is very important to apply this threshold cut in the gamma gamma analysis to get realistic results. In particular events with low energetic gammas originated from the pi0 decay are one of the major background source.

Quote:

The EmcRecoHit was an object requested long time ago by the genfit developers, for Kalman filter. After some time we have decided to not use the emc points for the kalman tracking, because of the reduced resolution with respect to tracking detectors and because new points make the analysis slower. So at the moment it is a dummy object which is not used at all. Maybe we should remove its task from the standard full_emc.C macro, in order to not introduce further misunderstanding.

After the bump splitting procedure the emc track matching should follow in the reco sequence. The bumps / cluster are then associated either with charged or with neutral particles. Then the energy and spartial correction should follow because the correction is strongly correlated to the assumed particle type. Therefore I would prefore to introduce objects like EmcChargedCand and EmcNeutralCand which then should be interfaced to the analysis part.

Ciao,
Bertram.