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Subject: Re: Geant3 tracking cuts for the EMC  
Posted by [Jens Sören Lange](#) on Fri, 16 Oct 2009 15:36:09 GMT  
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Bertram Kopf wrote on Fri, 16 October 2009 15:25

... range cuts instead of fixed energy cuts (at least for G4). I think that such cuts are more reasonable and more convenient for tuning the parameters with real data in the future.

Cheers,  
Bertram.

Hi Bertram,

here I have a different opinion.

I think experimentally (for "real data") it is really much easier to set threshold (e.g. discriminator) to energy (e.g. 1 MeV) and not to a particle range (e.g. 1 mm). In fact, so far we were (e.g. for the EMC) always talking about 1 MeV threshold or 3 MeV threshold or whatever value, but never about "threshold of 5 mm for a e-, but 3mm for a pi+ (in the same crystal)".

I also think that "1 mm range cut" gives just one possible result (e.g. for cluster energy), but nobody can say if it gives the correct result or not. Only the comparison to G3 or prototypes (and getting consistent results) can tell us which is the correct result. There was quite some discussion about this when we found the significant differences between G3 and G4. See e.g.

<http://panda-wiki.gsi.de/cgi-bin/view/Computing/Minutes06May2008>

<http://panda-wiki.gsi.de/cgi-bin/view/Computing/Minutes13May2008>

cheers, Soeren

P.S. the equivalent energy threshold values in your table are order of 0.1 eV or even finer, which is most probably too fine for tuning anyway.

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