
Subject: Changes in simplified digitisation of emc
Posted by [Dima Melnychuk](#) on Fri, 18 Dec 2009 13:13:48 GMT
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Hi all,

I have modified a little bit simplified digitisation of emc to take into account two most relevant parameters: electronic noise and photon statistics.

With UseDigiEffectiveSmearing=1 parameter in emc.par the task PndEmcMakeDigi will smear energy taking into account parameters DetectedPhotonsPerMeV, ExcessNoiseFactor and Incoherent_elec_noise_width_GeV according to:

$$\sigma/E = \sqrt{(a/\sqrt{E})^2 + (E_{\text{noise}}/E)},$$

where $a = \sqrt{F/N_{\text{p.e.}}}$,

F - excess noise factor and $N_{\text{p.e.}}$ - number of photoelectrons.

This option can be useful for comparison with prototype data.

Best regards,
Dima

Subject: Re: Changes in simplified digitisation of emc
Posted by [Johan Messchendorp](#) on Tue, 12 Jan 2010 21:24:53 GMT
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Hi Dima,

Thanks for the update; a simplification algorithm is always good! To let you know, I incremented the version number of the PndEmcDigiPar class by one. This because it caused in some cases troubles in reading the parameter database files in the case older versions were not deleted. In those cases it was not recognised by the framework that an incompatible set of parameters was present in the database file. The bottom line, we should not forget to update the class version number as well....

Greetings,

Johan.