Subject: EMC energy and position correction
Posted by donghee on Thu, 17 Jul 2014 21:56:49 GMT
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Hi all experts,

I am interested in the way of EMC correction.

I have learn that GetEnergyCorrected() of the PndEmcCluster is obsolete and in principle should be removed.
Instead of above method, corrected energy can be accessed by PndEmcClusterCalibrator class via fEmcCalibrator->Energy(cluster).
It looks like following way.
Quote:
```
 PndEmcAbsClusterCalibrator * calibrator1=
PndEmcClusterCalibrator::MakeEmcClusterCalibrator(1, version);
        ...
 PndEmcCluster *cluster=(PndEmcCluster*)cluster_array->At(i);
Double_t energy_corr1 = calibrator1->Energy(cluster);
```

What is the difference between old method GetEnergyCorrected() and new method suggested above?
New method for EMC calibration can be only used, if we are working on the EMC cluster.
In the pure analysis level, we have only neutral candidate thus we don't have a chance to calibrate them.
However, at analysis level neutral candidate has an information of EMC calibrated energy, which can be accessed by GetEmcCalEnergy().
What is this correctly? Is it created with new methods? or still from old method using GetEnergyCorrected().

Best wishes,
Donghee

Subject: Re: EMC energy and position correction
Posted by StefanoSpataro on Thu, 17 Jul 2014 22:31:44 GMT
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In the neutral candidate the energy is already calibrated, using the correct PndEmcClusterCalibrator.

Subject: Re: EMC energy and position correction
Posted by donghee on Fri, 18 Jul 2014 09:57:38 GMT
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Hi Stefano,

The cluster calibrator has two different method first one is with histogram and other one is based on the parametrization.

In our standard calibration for neutral candidtae in PID correlator is the histogram method. (I checked in PndPidCorrelator)
And geometry version is set to 3 during EMC calibration.

But in PndEmcClusterCalibrator I found only version 1.
Quote:
// Versions of the correction:
// 1 -
"emc_module12.dat","emc_module3_2011_new.root","emc_module4_StraightGeo24.4.root","emc_module5_fsc.root" (+ full PANDA geometry) TGeant3

What is the geometry configuration with verstion=3?

Best wishes,
Donghee

Subject: Re: EMC energy and position correction
Posted by donghee on Fri, 18 Jul 2014 10:05:14 GMT
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Hi Stefano,

I found the meaning of veresion.
That is related correction parameters in macro/param/

emc_correction_hist_gamma_1.root
emc_correction_hist_gamma_2.root
emc_correction_hist_gamma_3.root
emc_correction_hist_gamma_4.root

So one more question is what is the difference between them?

I assume that most lilkely version 4 is the latest calibration file.

Best wishes,
Donghee

Subject: Re: EMC energy and position correction

Posted by Dima Melnychuk on Fri, 18 Jul 2014 10:44:10 GMT
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Hi Donghee,

In the post

https://forum.gsi.de/index.php?t=tree&th=4030&goto=15671&#ms g_15671

the versions are explained.

Dima

Subject: Re: EMC energy and position correction
Posted by StefanoSpataro on Fri, 18 Jul 2014 11:03:40 GMT
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Hi Dima,
currently in the pid correlator we are using:

fEmcCalibrator= PndEmcClusterCalibrator::MakeEmcClusterCalibrator(1, 3);
Should it be corrected to 2,3?

Subject: Re: EMC energy and position correction
Posted by Dima Melnychuk on Fri, 18 Jul 2014 11:49:10 GMT
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Hi Stefano,

fEmcCalibrator= PndEmcClusterCalibrator::MakeEmcClusterCalibrator(1, 3);

is proper version

2,3 appeared to be buggy.

Dima

Subject: Re: EMC energy and position correction
Posted by StefanoSpataro on Fri, 18 Jul 2014 11:57:33 GMT
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Thanks, in the old post you were suggesting to use 2,3. Just to be sure.