Subject: Geometry for tiles in front of EMC
Posted by Lars Schmitt on Fri, 02 Jul 2010 11:34:24 GMT
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Dear colleagues,

We would like to create a geometry for the new tile hodoscope derived from the EMC geometry. The plan is to have a small scintillator tile of 2x2x0.5 cm^3 in front of each EMC crystal. The distance to the front face is still open. It can be between 0 and 2 cm depending on which other services are needed on the crystal front face.

Is there an easy way to extrapolate a geometry like this from the existing EMC geometry? Or do we have to create all tiles separately from a large set of numbers?

Thanks for the help.

Best regards,

Lars

Subject: Re: Geometry for tiles in front of EMC
Posted by StefanoSpataro on Fri, 02 Jul 2010 11:47:03 GMT
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Hi Lars,
something similar was done by Chris Strackbein in Giessen, to include APDs after the barrel EMC.
In his case, he has looped inside the barrel emc geometry file (emc_module12.dat), taken back the geo trap parameters and then he has written a new file (apd_module12.dat) changing the params such as position and thickness, and leaving the rest.

Considering that the barrel geometry is written as ASCII, I think it should be not so difficult to write a macro which takes the values, performs the useful geometrical transformations, and then rewrites the new geo. Maybe you could try to contact him directly, or ask Volker/Reiner (I am not sure if he reads the forum).

Subject: Re: Geometry for tiles in front of EMC
Posted by Lars Schmitt on Thu, 15 Jul 2010 11:58:57 GMT
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Dear Stefano,

Thanks for the reply. On your initiative I received now from Björn from Gießen the script, that Chris has once written.
This looks very helpful. I attach it here for future reference.

Now one question I have to you and the EMC people is the following: Has the APD volume (apd_module12.dat) been implemented in any way in the actually used geometry? I did not find anything pointing to this. Even if the geometry description exists I see no code which would make use of it to implement it as a real detector or at least material. But maybe I am just blind.

Or does one have to follow the lines in which emc_module12.dat and other geometries are really implemented?

Many thanks for the help.

Yours,

Lars

File Attachments

1) crystal2apd.C, downloaded 525 times

Subject: Re: Geometry for tiles in front of EMC
Posted by Dima Melnychuk on Thu, 15 Jul 2010 12:14:58 GMT
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Dear Lars,

Implementation of APD as real detector is in /emc/EmcMC/PndEmcApd.cxx class.

The task which sum energy over APD and produce PndEmcApdHit is /emc/EmcDigi/PndEmcApdHitProducer.cxx

The macros which perform simulations are:

/macro/emc/dedicated/sim_emc_apd.C (I have just updated it rev.9415 since the trunk version didn't work)

/macro/emc/dedicated/hit_emc_apd.C

and /macro/emc/dedicated/reco_apd.C

Best regards,
Dima
