Subject: Geometry for tiles in front of EMC
Posted by Lars Schmitt on Fri, 02 Jul 2010 11:34:24 GMT
View Forum Message <> Reply to Message

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
View Forum Message <> Reply to Message

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
View Forum Message <> Reply to Message

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 443 times

Subject: Re: Geometry for tiles in front of EMC
Posted by Dima Melnychuk on Thu, 15 Jul 2010 12:14:58 GMT
View Forum Message <> Reply to Message

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