Subject: Re: Position calculations on start/stop scintillators
Posted by miree on Wed, 13 May 2015 12:56:29 GMT
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Hi Tayfun,

I'll try to summarize some facts about the CircularMembrane first, and then try to outline of a Membrane selfcalibration algorithm:

The time and position calculation of the CircularMembraneScintillator processor needs to be calibrated in order to work. Especially the position determination depends strongly on the quality of the calibration.
The processor is not doing any calibration on it's own (like the DSSSD). It only provides some output that is useful to find good coefficients. All calibration procedures that I've seen so far need particle position information from other tracking detectors.

A minimization routine as described in my last post requires additional code: It needs to work with a given number (say 10000) of events. These events have to be analyzed over and over again, each time with slightly different calibration coefficients. The result of each single analysis schould be a quantity that allows to judge the quality of the calibration. Calculating this quantity involves an analysis similar to the current CircularMembraneScintillator. As minimization algorithm I would take a library such as the GNU scientific library. It contains the "simplex minimizer" which I would try first. It worked well in the case of Christian's DSSSD calibration.

I think it would be cool to have such an algorithm. But it will require some work to get it running, i.e. it is not a simple modification of the existing processor.