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Subject: Re: concept of stt reco

Posted by [Stefano Spataro](#) on Tue, 07 Aug 2007 08:50:56 GMT

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Hi Piotr,

I read your message about stt reco for drift chamber.

Stt developers are on holydays now, so probably they will not reply you before

In each case the correct directory should be "stt", which is a merge of the Pavia code and what implemented Ralph (we should decide if it is the case to remove stt1 and stt2 from or main compilation, if obsolete).

If you want I can tell you what we did for HADES, for tracking.

We had 4 planes of drift chambers, place two before and two after the magnetic field. Each chamber was composed by 6 wire layers arranged with different angulation, so it is very close to our design (only two chambers missing).

What we did was first to have the position information from each chamber separately, we developed a cluster finder algorithm per chamber based on projections(I can explain you what we did), and when we find the group of wires per chamber we fit the times to have the x and y information on the plane (we did even merging different planes, but this is a bit more complicated).

After we mixed the informations coming from different planes to have momentum. You can find some informations on the presentation I gave to the last pattern recognition meeting in Ferrara:

<http://panda-wiki.gsi.de/pub/Computing/PandaPatternRecognitionFerrara2007/spataro-20070509-Ferrara.ppt>

I wrote some line of codes for Panda that, from x and y of each plane, you have real pattern recognition and momentum reconstruction with a resolution of about 2%, that you can give as prefit value to the kalman filter code (using the kickplane algorithm, if you read my slides).

To the kalman one could in theory give the single layer information, or the xy of the plane, this has to be decided. In each case with the different layers information it should be not so difficult to solve the ambiguity left/right, while this is not the case for stt where the situation is a bit more complicated.