
Subject: Re: Weird STT reconstruction: efficiency depends on charge

Posted by [Andrew Savchenko](#) on Thu, 17 Jan 2008 16:19:45 GMT

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Dear Pablo,

first of all to avoid uncertainties I should mention that I use rather new SVN revision 1993 of pandaroot.

Quote:

Did you check if, at least, the modulus of the momentum is reconstructed properly (for the positive particles)?

No, moreover I'm wondering how can reconstruct full momentum using STT only, afaik it is possible to reconstruct only transverse momentum using the Straw Tracker. And I have not done it yet, below I'll describe why.

Quote:

By the way how do you calculate the reco theta starting from the reconstructed momentum? I guess you have to do some calculations to back propagate it at the vertex, right?

I haven't performed any calculations on my own, I just used existing code in the following way. I used a macro `macro/stt/runreco.C` which calls `PndSttHelixTrackFitter` in order to fit the tracks. And then I used values from output of this macro.

At this point I got a lot of problems while trying to understand what the fit parameters means. They are stored at the `CbmTrackParam` class, but the description of the fields `fX`, `fY`, `fZ`, `fTx`, `fTy`, `fQp` in this class documentation completely differs from their real meanings used in `HelixFitter`. I got a completely crazy results until I looked in the `PndSttHelixTrackFitter` source code (`stt/PndSttHelixTrackFitter.[cxx|h]`).

From that source code and its comments it figured out, in particular, that $fTy = \tan(\pi/2 - \theta)$, so I used this value.

But I'm new to the project and Z reconstruction procedure is still not clear to me, currently I'm supposed to use already working STT track reconstruction code.
