Subject: Re: Decay analysis
Posted by Klaus Götzen on Fri, 14 Mar 2014 07:00:05 GMT
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Hi Alexandros,

from a quick view I would say your analysis in general looks fine. Concerning the issues you observe I have some ideas:

- Low psi efficiency: The reason for this could be your PID selection (KaonLoose, PionLoose) requiring P>0.25. There is currently a bug (being fixed at the moment) in the assignment of DIRC PID info to tracks leading to a drop in efficiency for selection of pions, kaons and protons. Try with KaonAll and PionAll and look, whether your efficiency increases. You can tighten your PID requirements in the analysis of your ntuple to find out whether this is the problem.

- Multiple MCT matches: The full mct tree match requires, that the assignement of reco particles to truth objects is correct. This is not always the case as far as I've seen, so that sometimes multiple recos are assigned to the same McTruth object. This of course also leads to multiple tree matches. I think the truth match itself works fine.

- Concerning your analysis script: I saw tiny problems in lines 149ff and 240ff, where you store info about the truth candidates, if the match was successful. When using the RhoTuple it is more safe to always fill all columns, and not some just under certain conditions, since in the latter case for some ntuple entries the branches might not be filled properly. So I usually do some 'fake' fill in case the mct match failed...

Hope that helps a bit.

Best,
Klaus