
Subject: Re: entries at unphysical mass after vertex fit
Posted by [Jennifer Pütz](#) on Mon, 17 Aug 2015 13:16:16 GMT
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Hi everyone,

I found the same problem as Albrecht. I plotted the difference of the masses of the daughters before and after the fit and saw that they are not exact needles. So I had a closer look into the PndKinVtxFitter and found that the four-momentum of the daughters after the vertex fit is set to $(p_{\text{vtx}}, E_{\text{vtx}})$. p_{vtx} and E_{vtx} are the 3-momentum-vector and the energy of the daughter particle coming out of the vertex fit.

But E_{vtx} is not taking the mass hypothesis of the daughter particle into account. So I replaced E_{vtx} with $\sqrt{p_{\text{vtx}}^2 + m^2}$. (This was already implemented in the code but commented out.)

After doing that, the unphysical masses for Λ_0 have disappeared and the mass differences show now exact needles (see attached files).

Best,

Jenny

File Attachments

- 1) [Lambda0Mass_vtxfit_uncorrected.pdf](#), downloaded 413 times
 - 2) [Lambda0Mass_vtxfit_daughters_uncorrected.pdf](#), downloaded 328 times
 - 3) [Lambda0Mass_vtxfit_corrected.pdf](#), downloaded 335 times
 - 4) [Lambda0Mass_vtxfit_daughters_corrected.pdf](#), downloaded 299 times
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