
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_vtx, E_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 Lambda0 have disappeared and the mass differences show now exact needles (see attached files).

Best,

Jenny

File Attachments

- 1) [Lambda0Mass_vtxfit_uncorrected.pdf](#), downloaded 557 times
 - 2) [Lambda0Mass_vtxfit_daughters_uncorrected.pdf](#), downloaded 452 times
 - 3) [Lambda0Mass_vtxfit_corrected.pdf](#), downloaded 461 times
 - 4) [Lambda0Mass_vtxfit_daughters_corrected.pdf](#), downloaded 425 times
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