

---

Subject: Vertex fitter for eta\_c analysis

Posted by [Dima Melnychuk](#) on Wed, 13 Jul 2011 14:31:04 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Dear colleagues,

I would like to inform you that Elisa has found a bug in my eta\_c analysis macro related to usage of vertex fitter and after correction it gives reasonable results in the sense of mass distribution.

Using PndKinVtxFitter eta\_c and phi mass looks like

And for comparison using 4C kinematics fit

So in both cases mass resolution looks almost identical.

In case of 4C-fit daughter particles are not updated after the fit, i.e. it shouldn't modify the shape of mass distribution, but for vertex fit daughter particles are updated and I would expect bigger improvement/difference of at least eta\_c mass, but it's not the case.

And I didn't look yet how position of the vertex is reconstructed, i.e. (reconstructed - MonteCarlo).

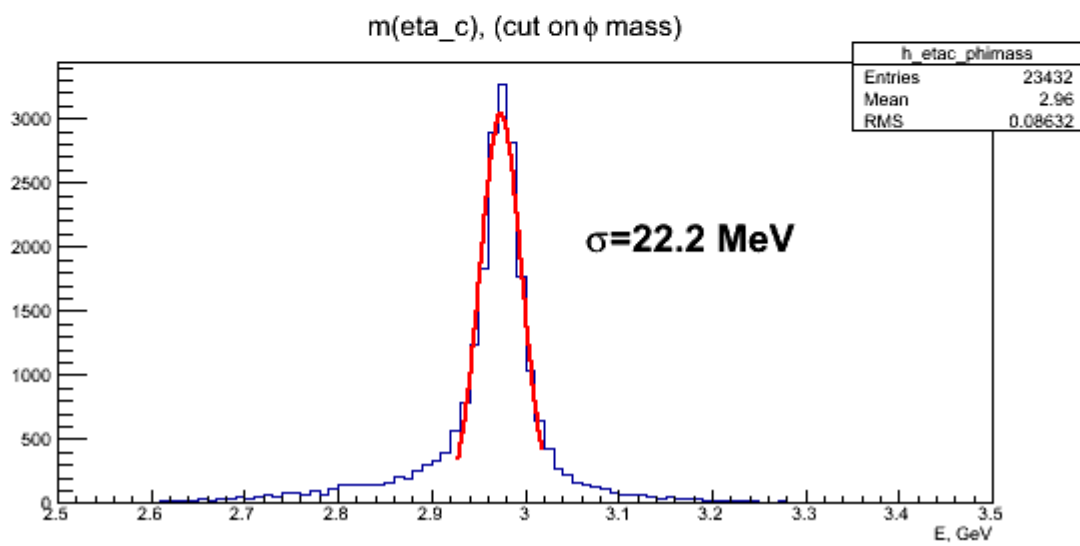
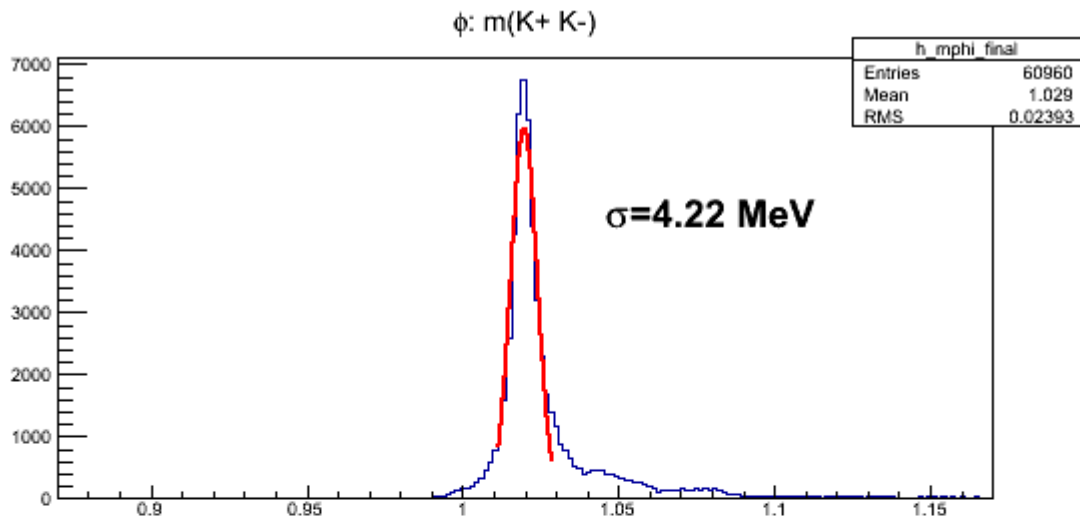
But in principle now both fitters could be used in analysis.

Dima

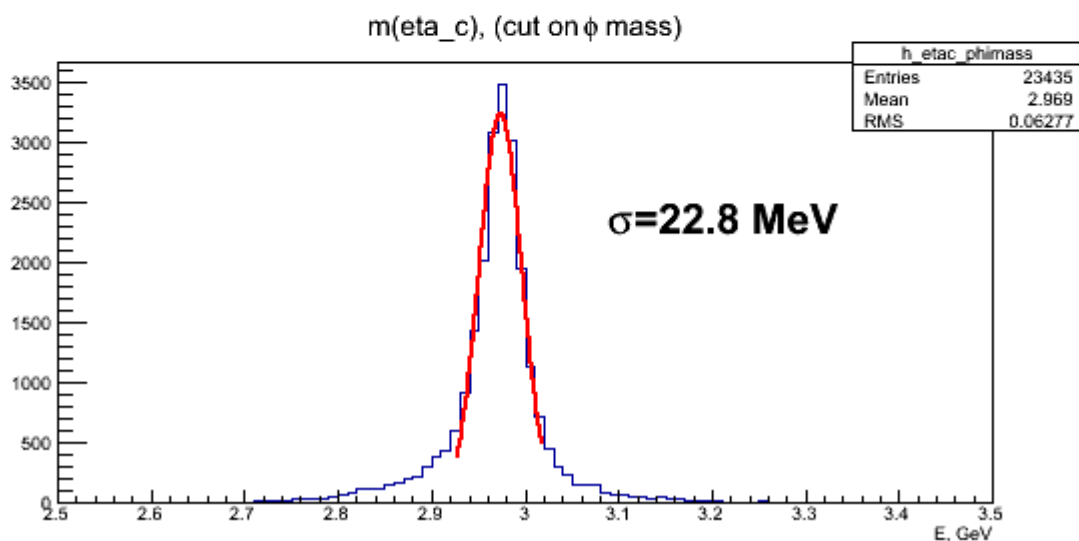
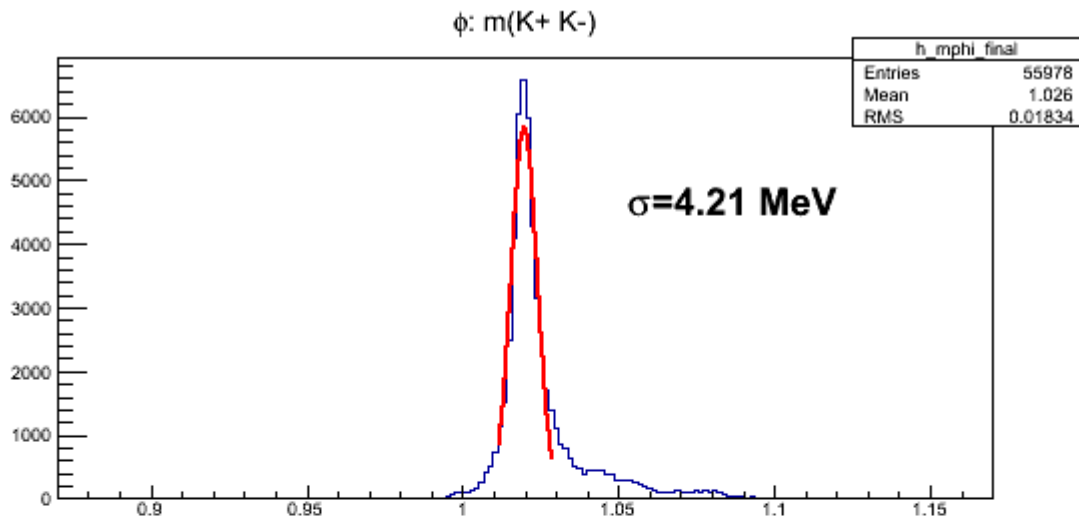
#### File Attachments

---

1) [m\\_etac\\_stt\\_vtx.png](#), downloaded 606 times



2) [m\\_etac\\_stt\\_4c.png](#), downloaded 556 times




---

Subject: Re: Vertex fitter for eta\_c analysis  
 Posted by [Klaus Götzen](#) on Wed, 13 Jul 2011 15:07:20 GMT  
[View Forum Message](#) <> [Reply to Message](#)

Hi Dima,

that's good news! Concerning the vertex fit I wouldn't expect too much improvement in mass resolution. In my Babar analysis I never observed significant mass resolution improvements from vertex fits, in particular for short living resonances.

Concerning updating of daughters I thought it's the other way around: I observed that the 4C fitter updates the daughters, but the vertex fitter doesn't...

However I'm taking a closer look at it anyways...

Cheers,

Klaus

---

---

Subject: Re: Vertex fitter for eta\_c analysis

Posted by [Stefano Spataro](#) on Wed, 13 Jul 2011 17:20:11 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Do you see any differences with tpc?

---