Subject: Re: Problem with mass constraint fit for two gamma
Posted by Lu Cao on Mon, 30 Jun 2014 14:51:42 GMT
View Forum Message <> Reply to Message

Hi Donghee and all,

this situation is the same in reconstructing pi0->gamma gamma, as I reported before.

In the fast sim, the invariant mass spectrum of the combination of two photons has a "nice" distribution peaked at pi0 mass, so it's understandable that the mass constraint fit can work as expected. In the full sim, the invariant mass distribution is filled with a significant "background" which may course problems of convergence in mass constraint fit, e.g. too small chi2, prob squeezed to 1.

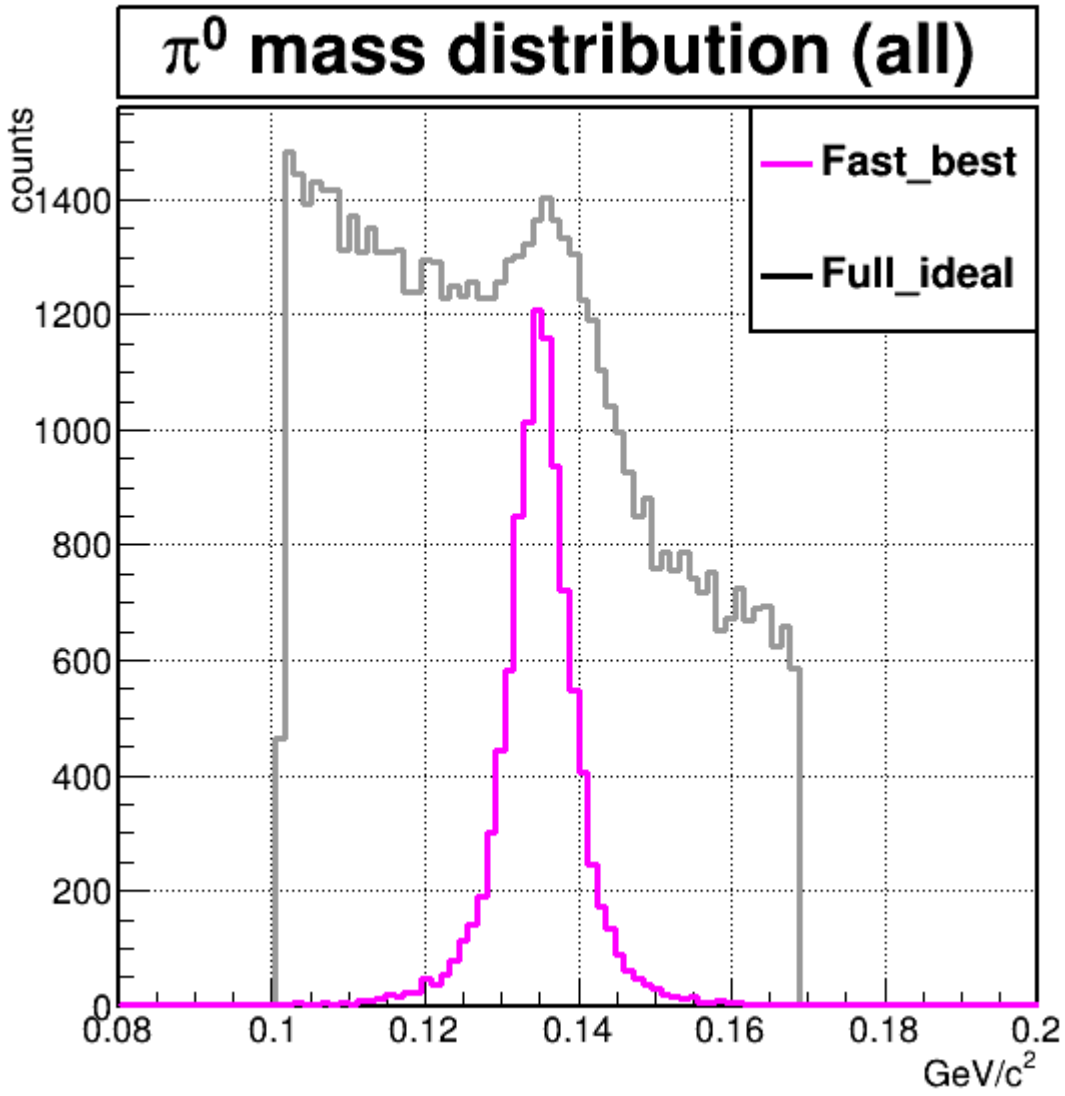
Since the PndKinFitter:AddMassConstraint() works fine for charged particles as well as the neutral in the fast sim, I'd like to guess the tool itself has no problem but to understand why the two-photon invariant mass distribution has so much "background" in the full sim. Is there any possible incorrect combinatorics, or where're the extra photons coming from?

Donghee, could you also show the gg invarit mass spectrum in your case?

Best regards,
Lu

File Attachments

1) mass_two-photon.png, downloaded 1276 times


π0 mass distribution (all)
counts
1400
1200
1000
800
600
400
200
0
0.08
0.1
0.12
0.14
0.16
0.18
0.2
GeV/c2
Fast_best
Full_ideal