Subject: Invariant Mass Distribution Widening after 4C Fit
Posted by André Zambanini on Wed, 08 Jul 2015 07:37:40 GMT
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Hi everyone,

during my investigation of cascade reconstruction with PandaRoot, I found that after the four-constraint fitter my mass resolution got worse. You can see the difference in the plot I attached. Shown are the invariant mass distributions after applying a cut on the probability (>0.01) of the four-constraint fit, once with the pre-fit values (blue) and once with the values after the fit (green).

institute and it seems, others see a similar effect when having a mixture of neutral and charged candidates as input to the 4C fitter.

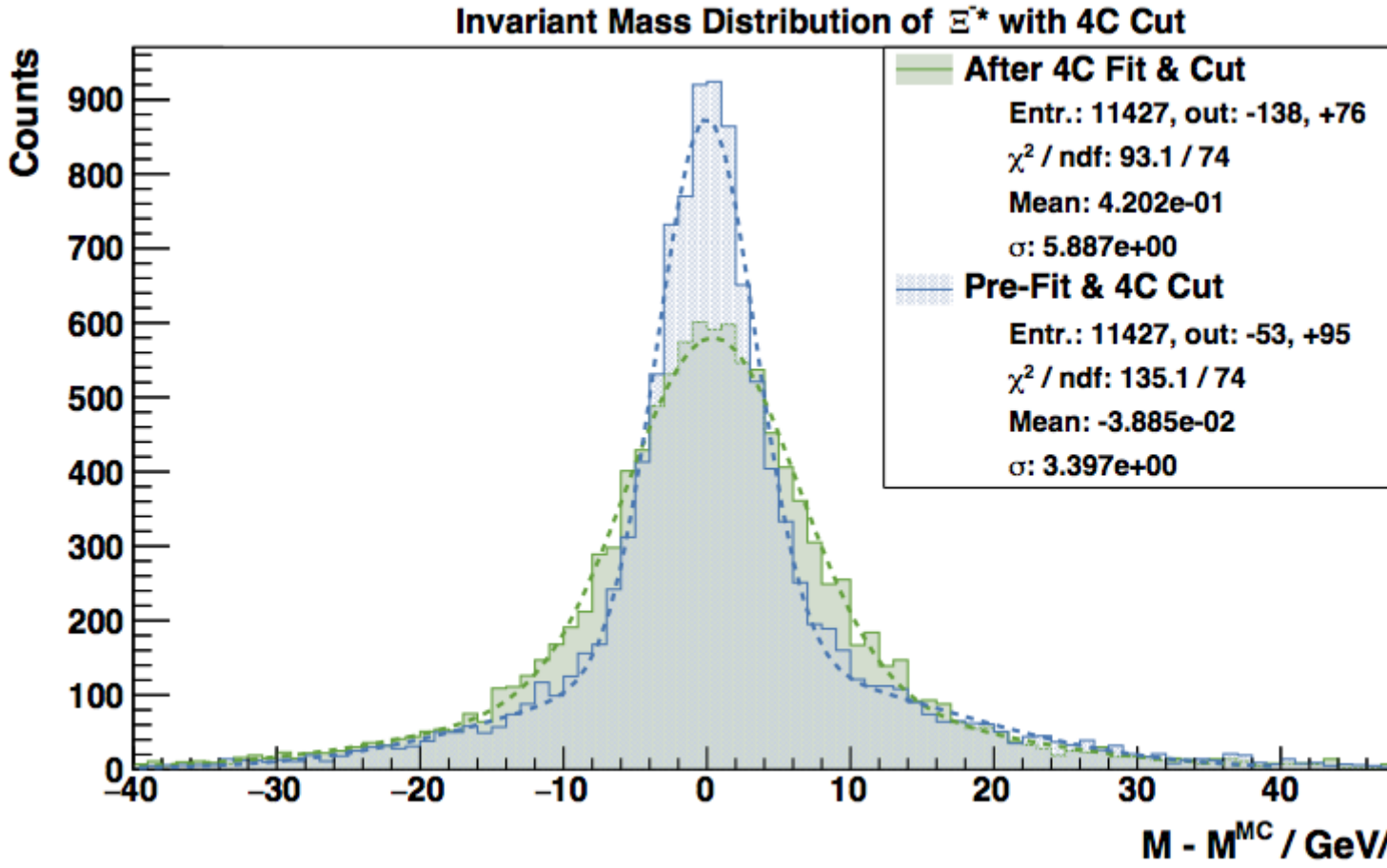
I'm running with trunk r27694 but it has been seen from others here with scrut14 as well. More details like a minimal running example will follow as soon as I have concluded my thesis, which is due in the next days. In the meantime: did anyone else see something like this? If so, is there an explanation to that?

Best,
-André

PS: The mass values are taken from the PndRhoTupleQA method qaCand().

## File Attachments

1) dm_xi.png, downloaded 1792 times


Invariant Mass Distribution of Ξ̄* with 4C Cut
Counts
After 4C Fit & Cut
Entr.: 11427, out: -138, +76
χ² / ndf: 93.1 / 74
Mean: 4.202e-01
σ: 5.887e+00
Pre-Fit & 4C Cut
Entr.: 11427, out: -53, +95
χ² / ndf: 135.1 / 74
Mean: -3.885e-02
σ: 3.397e+00
M - M^MC / GeV/