

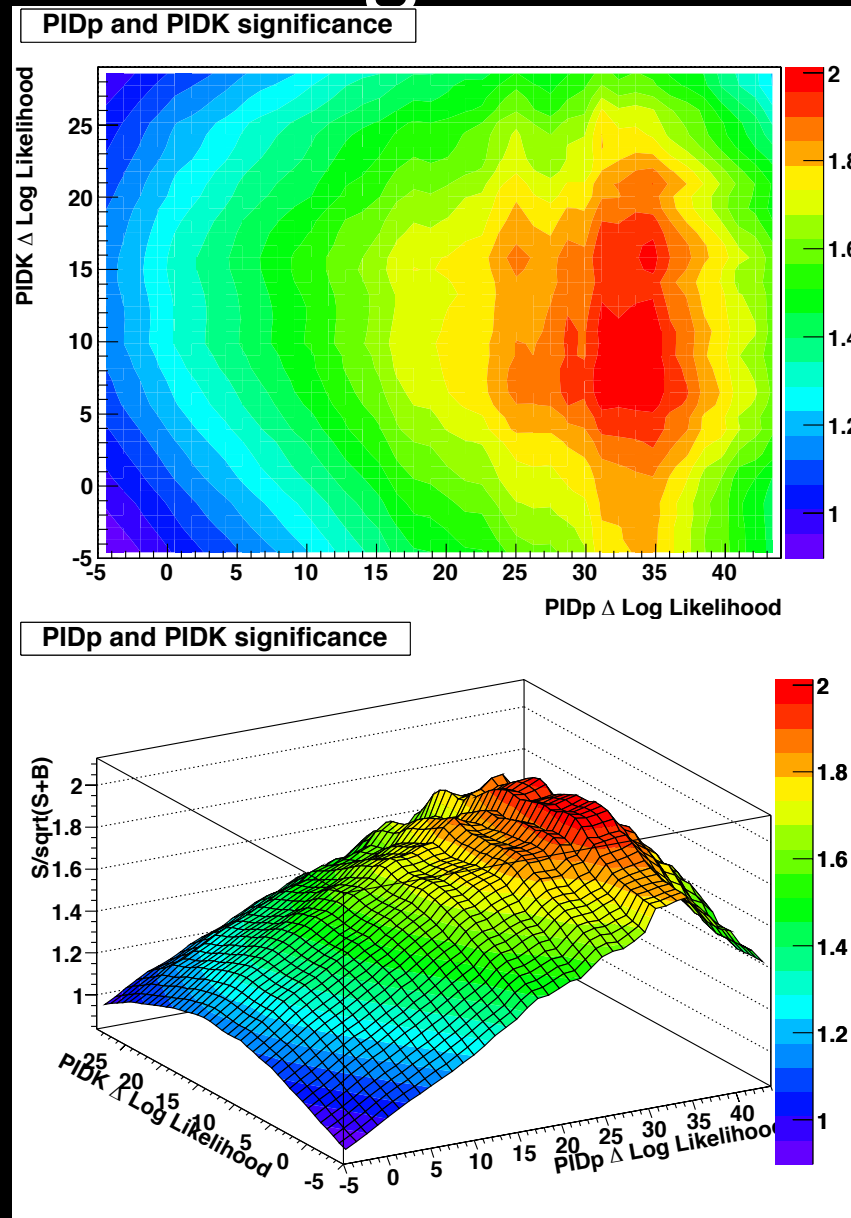
Lambda_c+ Hybrid Selection

Daughter cuts

11/11/11

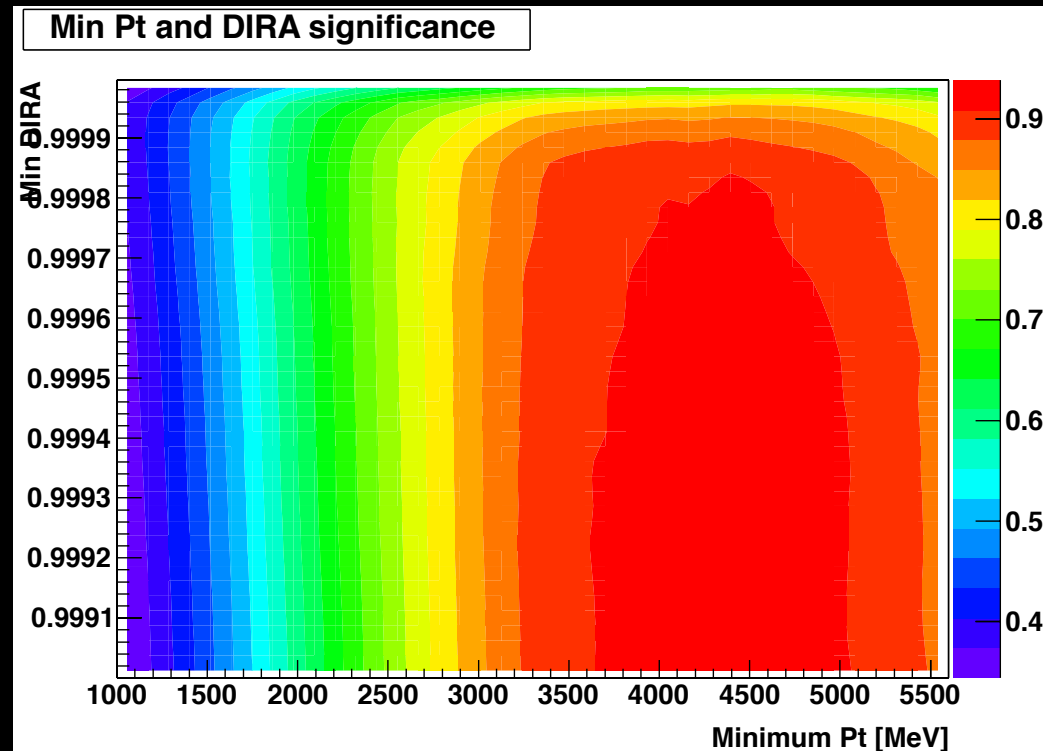
PIDk and PIDp rectangular cut

- min pt = 4GeV
- Still not getting above around 2σ significance...



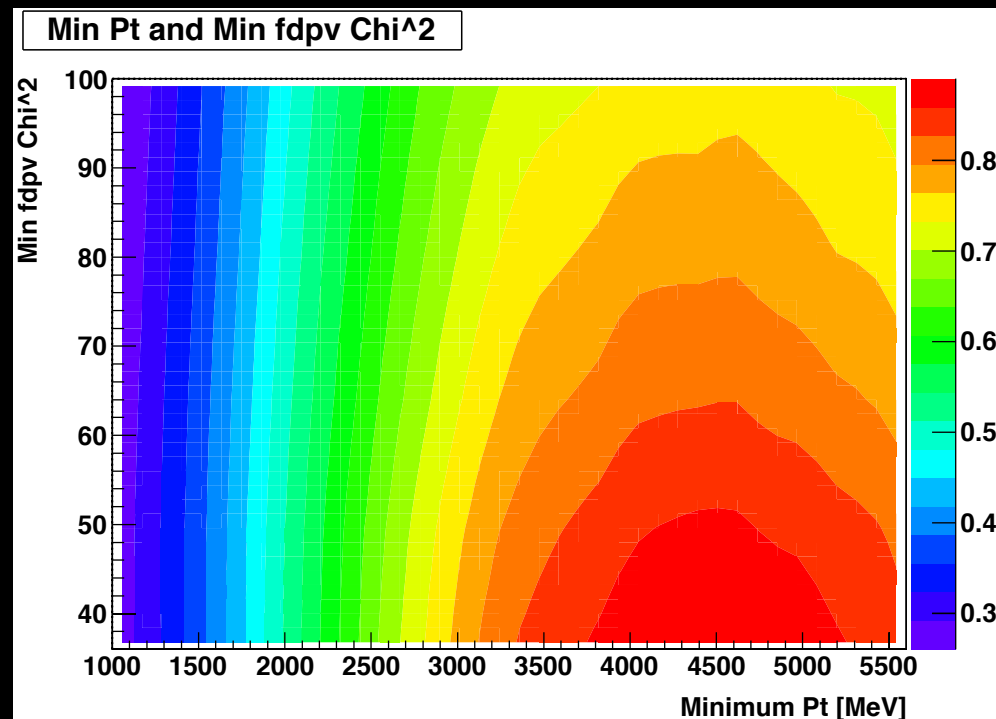
Tighter DIRA cuts

- Last time went down to 1.5 degrees or so, no turning point observed
- Now go from 2.5 to 0.1 degrees in 0.1 degree steps.
- Can now see the turning point.



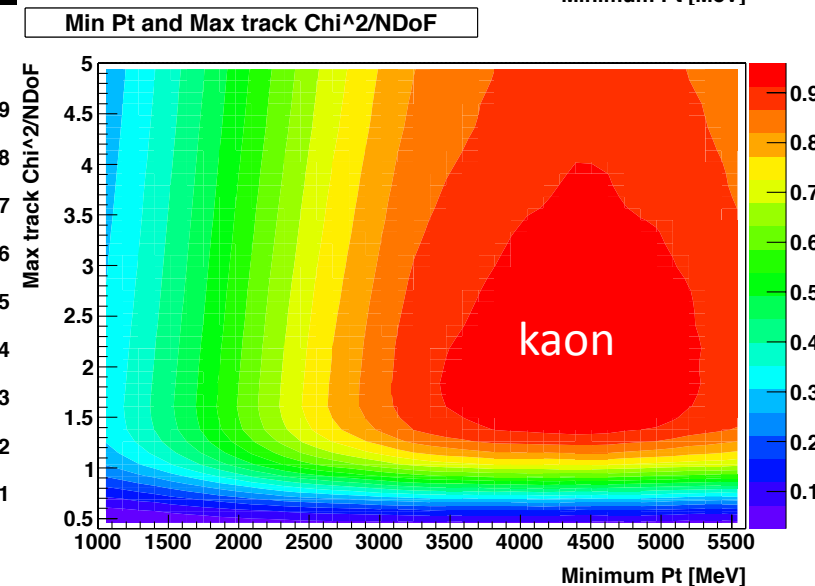
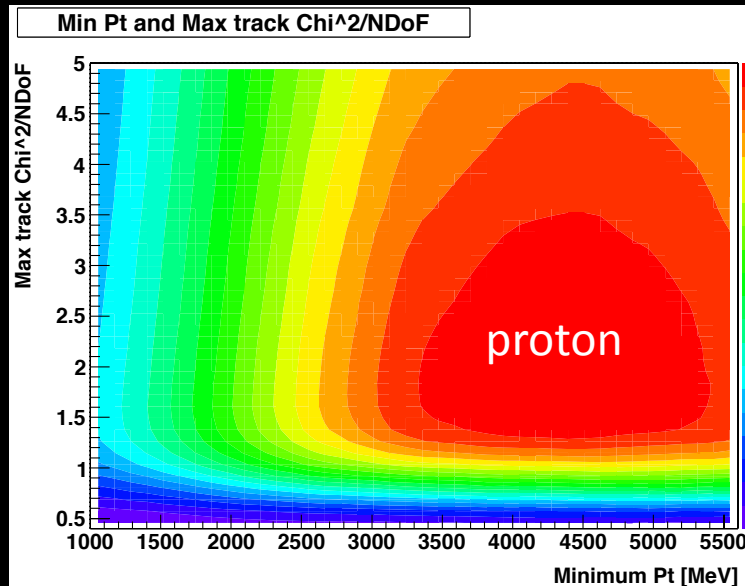
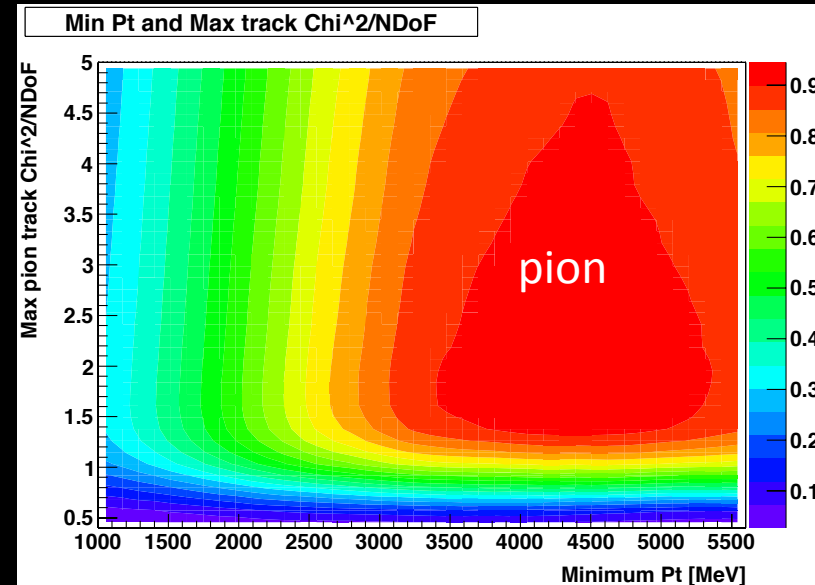
FDPV χ^2 optimisation

- Selection has min of 36.
- This was poor in the fitting optimisation
- Not much has changed...



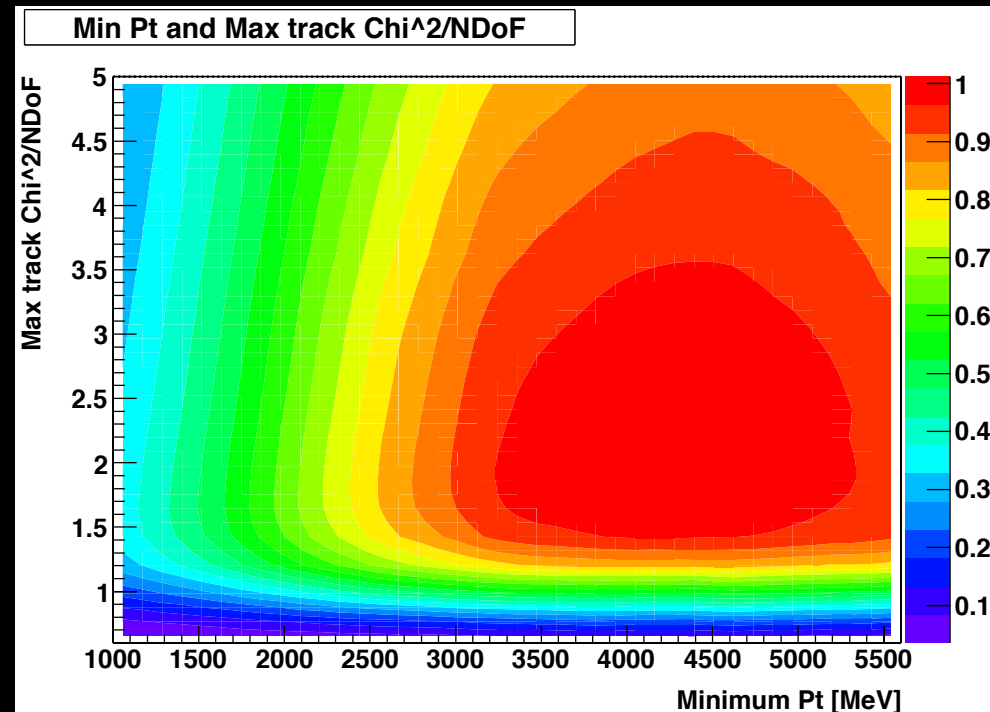
Daughter track quality cuts

- No great improvements over the selection cut of <5



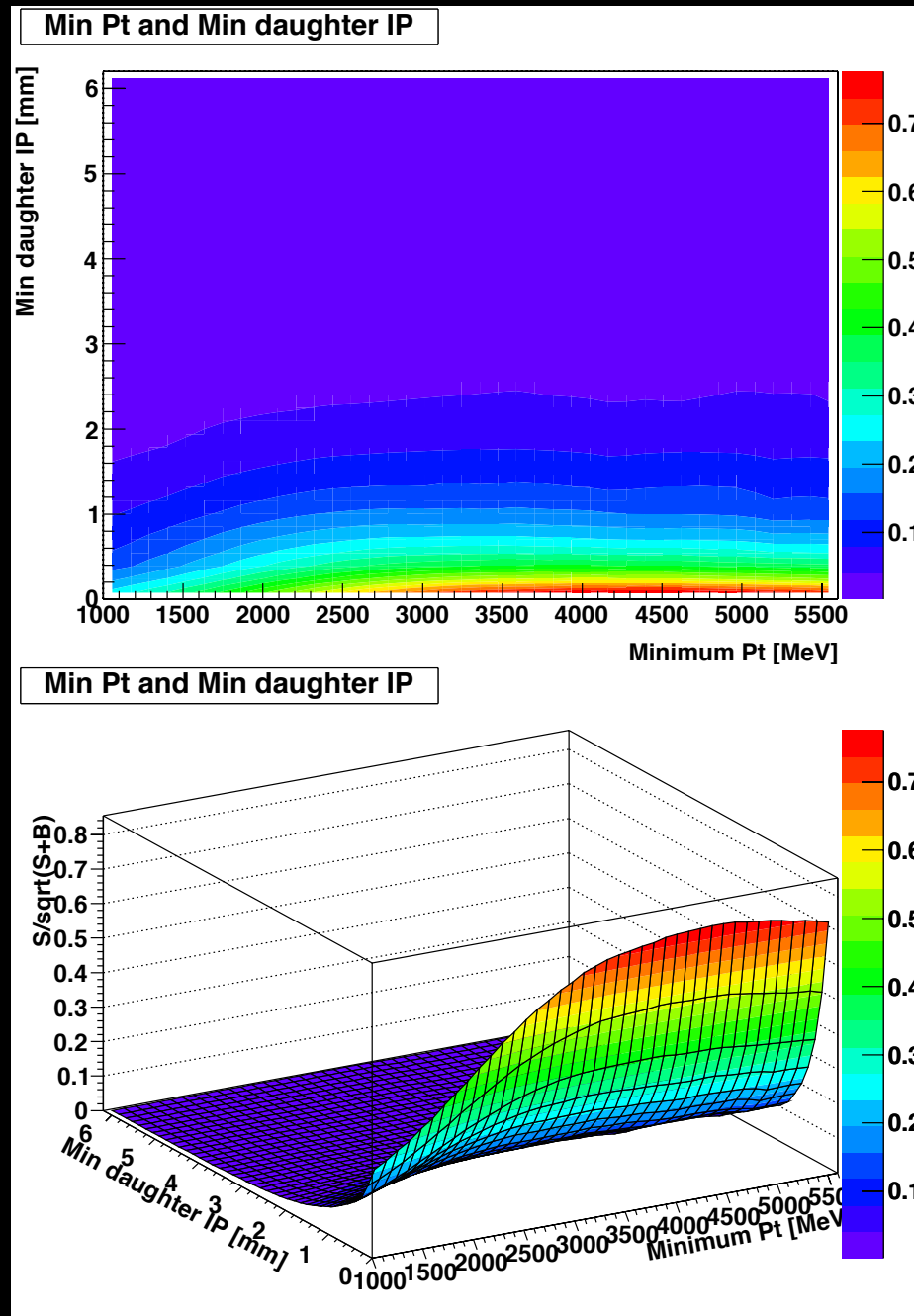
All daughter track quality

- All daughter cuts must satisfy cut to be accepted
- Better significance than selection, but still low overall.



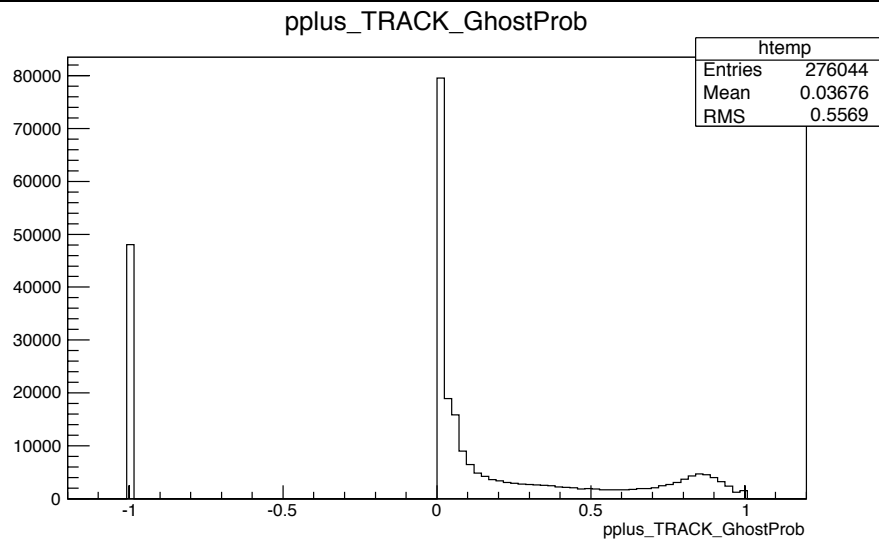
Minimum daughter IP wrt PV

- at least one daughter must have greater IP w.r.t. the PV than cut value to be accepted
- No great shakes...
- Too much prompt production in MC for this to be useful?

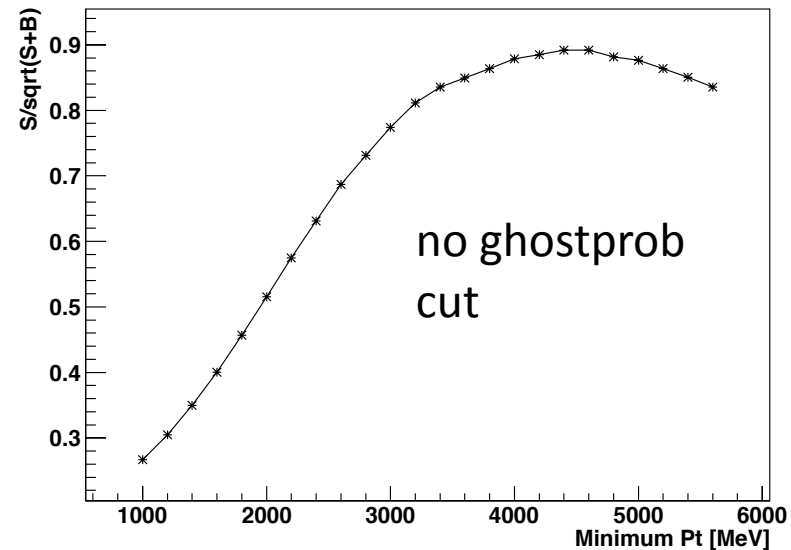


GhostProbability Window

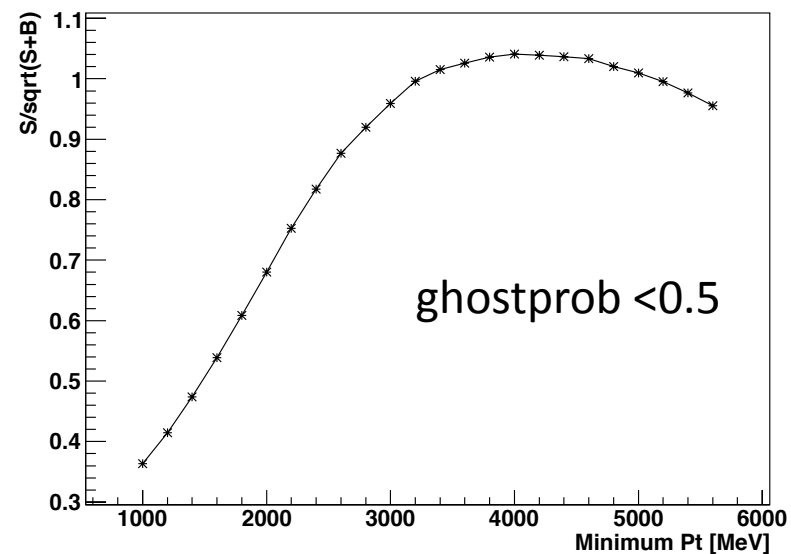
- Ghostprob is initialised at -1.
- If ghostprob is non zero it is set at the ghostprob value.



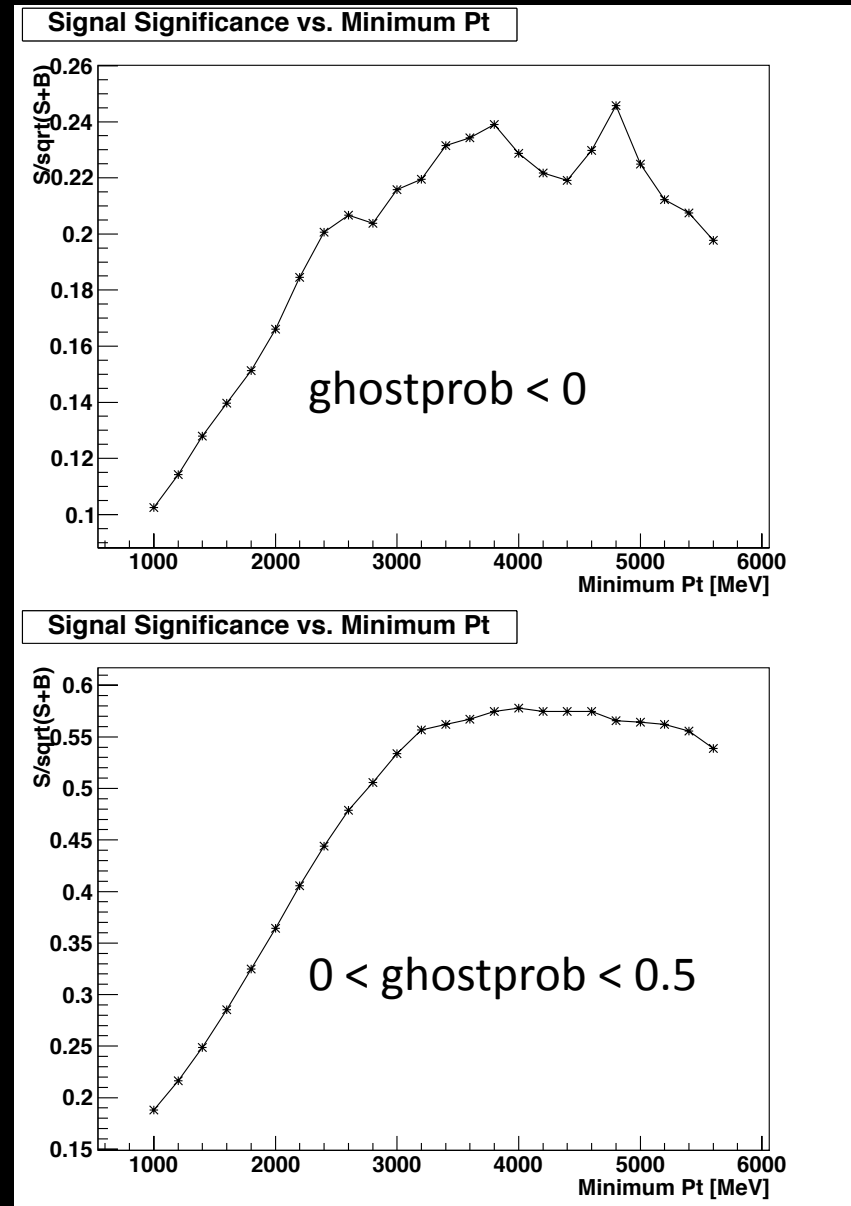
Signal Significance vs. Minimum Pt



Signal Significance vs. Minimum Pt



- Not quite sure about this...



- Incorporating these quantities:
 - daughter track χ^2 s all < 2.5
 - ghostprob < 0.5
 - Λ_c vertex $\chi^2/N\text{DoF} < 3$
 - KPID dll wrt pion > 15
 - pPID dll wrt pion > 30
 - ...

- Still not a great max significance
- Need to check correlations between all our variables
- May be better to do this in TMVA
- Currently looking at redoing the rectangular cuts in TMVA
- Also starting to look at Ξ_{cc^+} MC

(Remember, just applying a rectangular KPID and Pt cut gets close to this significance without all the other variables)

