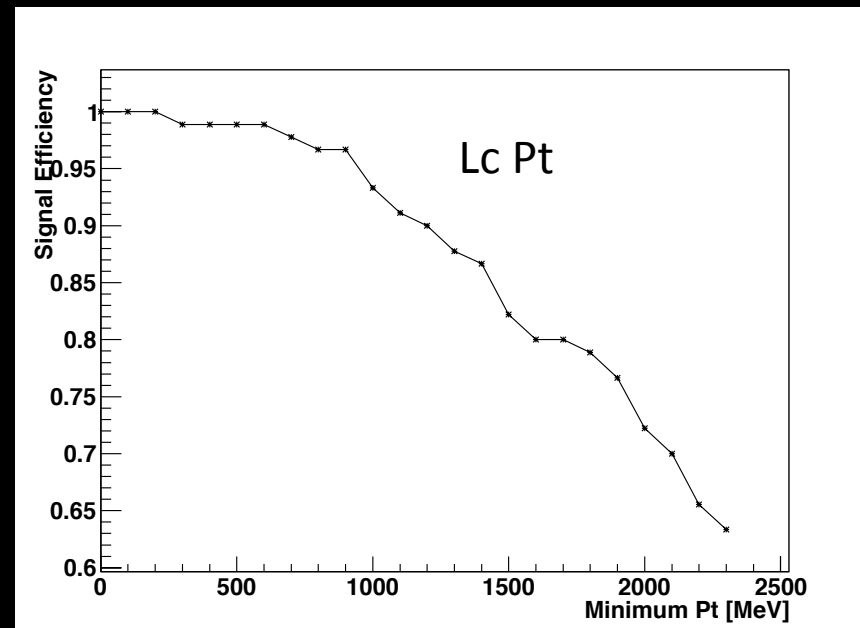
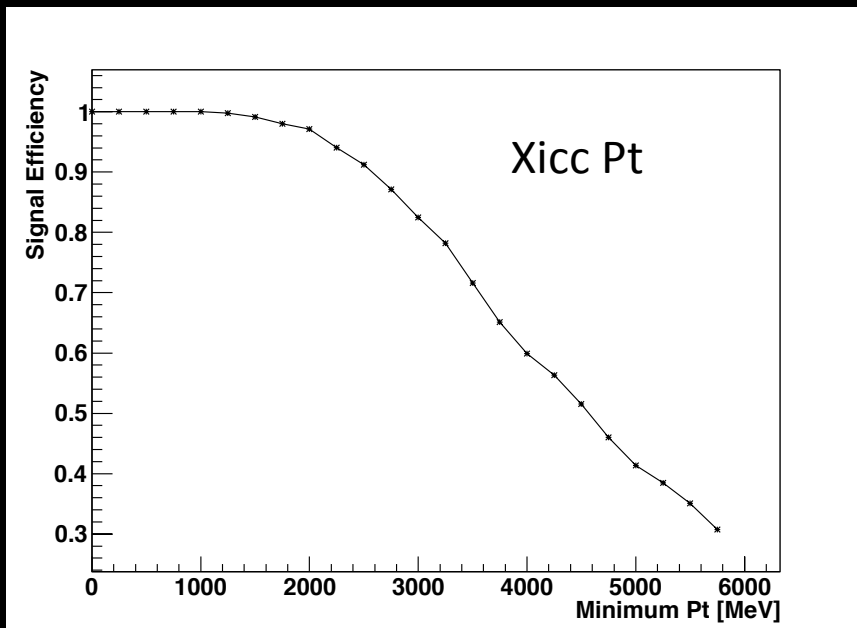


Stripping Selections

Method

- Looked at signal MC for each mode and looked at truth matched efficiencies as individual cuts are tightened.
- Eg. in Xicc -> Lc K pi...
 - Xicc+ Pt vs efficiency shown bottom left, efficiency begins to drop at Pt=1GeV so suggest this for selection.
 - Lc Pt from the Xicc decay loses signal events more or less straight away but we cut a lot of background at 900MeV without losing much signal, so suggest this
- Have checked signal significances but these are a secondary concern.
- If we sacrifice a little signal for a lot of background rejection have done so, but largely based on gut feelings.



Lc -> P K pi

Lc Pt > 1GeV

Lc DIRA > 0.99

Lc endvertex chi2 > 30 (not normalised against DoF)

Lc DOCAMAX < 0.5mm

Lc chi^2 > 16 (much better than the >36 in the existing stripping)

± 100 MeV Lc mass window

From Xicc decay: Lc Pt > 900MeV, pi/K Pt > 200MeV

All daughters : track chi^2 < 5 & PID DLLs > -5

Xicc -> Lc K pi

Xicc Pt > 1GeV

Xicc DIRA > 0.99

Xicc endvertex chi2 > 30 (not normalised against DoF)

Xicc DOCAMAX < 0.5mm

Xicc fd chi² > 9 (but should we take this out in case the SELEX lifetime is accurate?)

3GeV < Xicc Mass < 4GeV (from Matt's code, I gather in case the mass is significantly different than our expectations)

Lc min IPCHI2 > 0.02

From Xicc decay: Lc Pt > 900MeV, pi/K Pt > 200MeV

All pi/K: track chi² < 6 & PID DLLs > -5

Lc decay: NINGENERATION((MIPCHI2DV(PRIMARY) > 30.0), 1) >= 1)

Lc mass = PDG value ± 90 MeV

(CHILD(VFASPF(VZ),1) - VFASPF(VZ) > 0.01*mm)

Xicc -> D p K

Xicc Pt > 1.7GeV (no idea why we can go so much higher than the Xicc -> Lc K pi mode)

Xicc DIRA > 0.999

Xicc endvertex chi2 > 20 (not normalised against DoF)

Xicc DOCAMAX < 0.5mm

Xicc fd chi^2 > 4

3GeV < Xicc Mass < 4GeV

D min IPCHI2 no benefit, D fdchi2 > 110 (due to high D fd?)

From Xicc decay: D Pt > 800MeV, p Pt > 400MeV, K Pt > 250 MeV

All pi/K: track chi^2 < 5 & PID DLLs > -5

±90 MeV D+ mass window (may recheck the Lc mode based on this...)

Haven't had time to check this one, but it was useful in the stripping for Xicc-> Lc K pi:
(CHILD(VFASPF(VZ),1) - VFASPF(VZ) > 0.01*mm)