# Xic analysis meeting
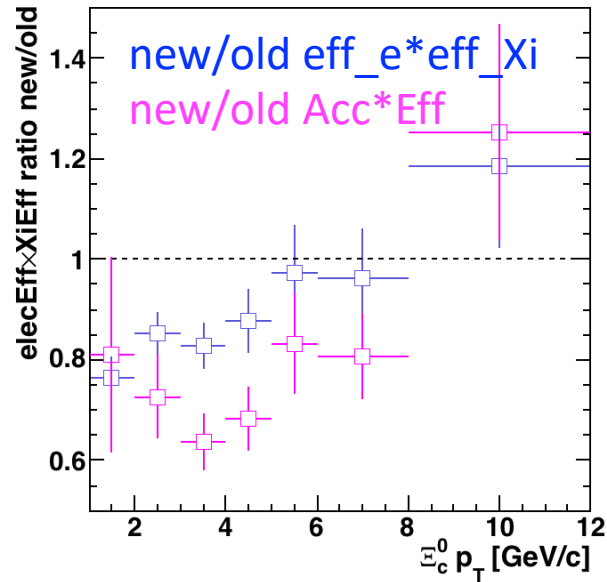
Mar 4th 2021

Jeongsu Bok

- Electron default cuts
  - filterbit check + TPC refit + ITS refit : ITS cluster cut + Xi2/N_ITS cluster cut + Xi2/N_TPC cluster cut + DCA cut

- Xi default cuts
  - DCAXiDaughters cut + DCAPOS(Neg)ToPrimVertex cut + DCABachToPrimVertex + CosineOfPointingAngle + DecayVertex + Invariant mass cut

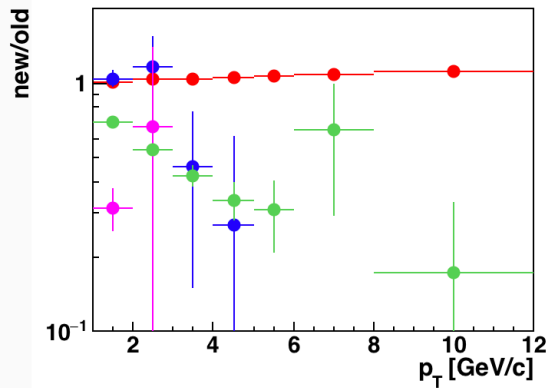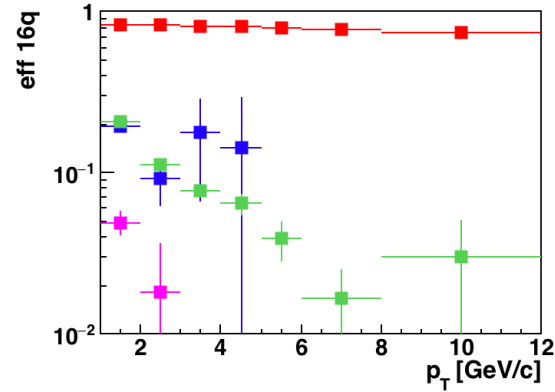- Does explain ~half of final efficiency drop

New efficiency

Old efficiency
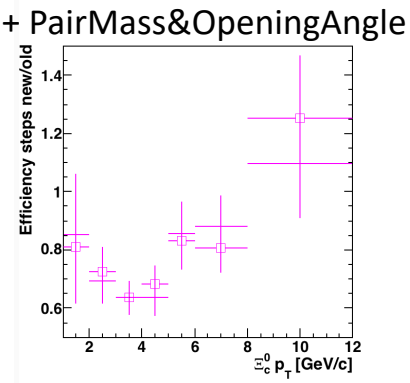
- Xi efficiency drop comes from
- Each daughter shows efficiency drop in new MC
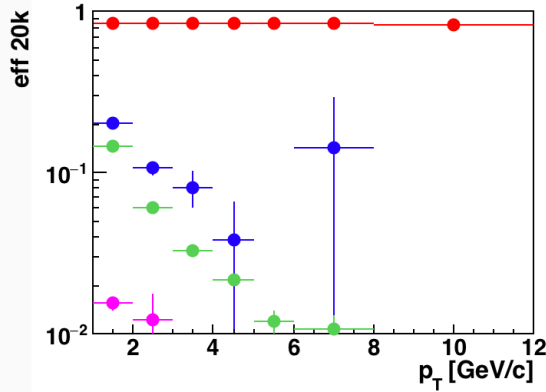
New/Old

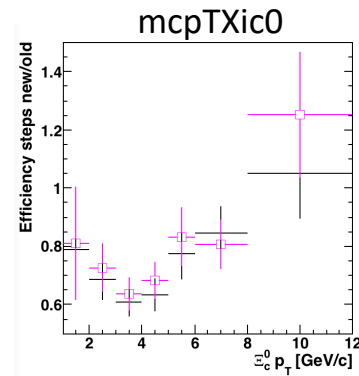Primary pion
Pion from Xi-
Pion from Lambda
Proton from Lambda

# Checking standard cuts



mcpTXic0



+ eReco&ePID



+ XiReco&XiTopology



+ PairMass&OpeningAngle
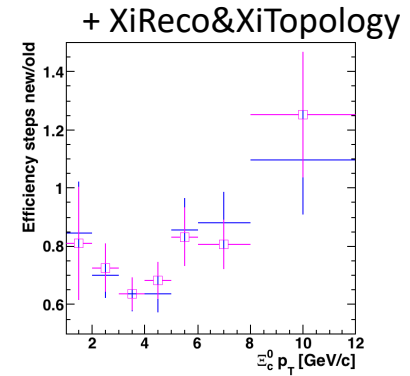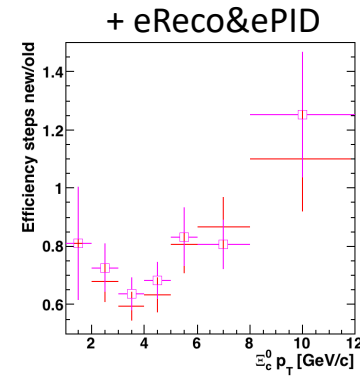
- Pink : new/old efficiency (final)
- Already low at the beginning
- ➜ new eff already low before standard cut
- Suspecting step between default cut and standard cut

# XicO status

- Looked over all steps
  - 1. Default cut in the code
    - Electron rapidity cut applied in old sim → make efficiency lower in new MC
    - Xi default cut cuts more fraction → make efficiency lowe in new MC
      - Looking at detail : proton, pion
      - But they contribute efficiency drop partially.



  - 2. standard cut in the macro
    - Before standard cut, the ratio of efficiency (new/old) is already very low

  - Therefore, I suspect substeps between 1&2 are responsible, working on it.