Status E⁰_c analysis, Nov. 14, CKim

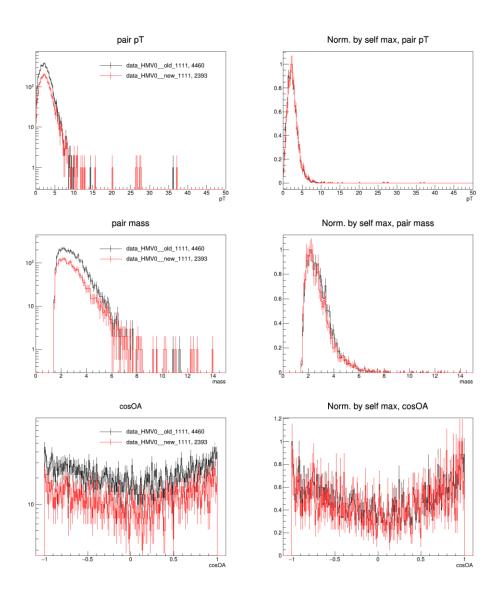
xCheck between old vs. new

- Details for comparison
 - a. Online selection: Grid running by using each framework, for data samples (statistics: 5 runs in LHC18p)
 - * WRT the old code, some conditions are either loose (FilterCascade) or tight (FilterElectron)
 - b. Offline selection:
 - b-1. Compared e-Xi pairs before applying cut levels (e.g., stand, etc)
 - b-2. Items comares: pT, mass, and cos(opening angle) after pairing

Crosschecks

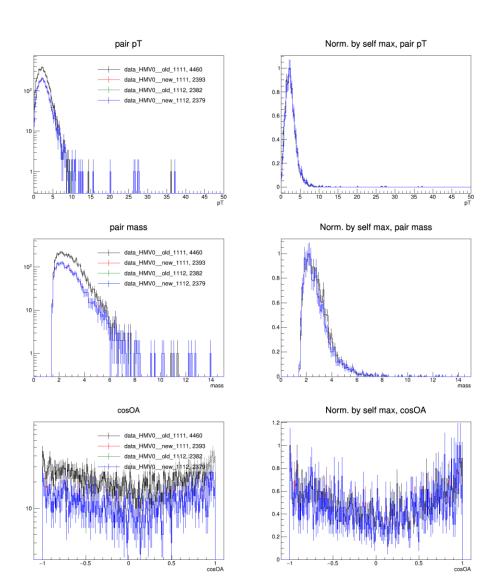
- a. For some unknown reason the pair yields were continually inconsistent
- b. Strange thing is, they exactly match when compared by a sample AOD at KIAF
 - b-1. Tested by an AOD, then by 5 AODS later
 - b-2. To track down the source, intentionally matched new code's conditions to the old the difference lingers
 - b-3. Finally found the source after multiple try

Comparison 1/3



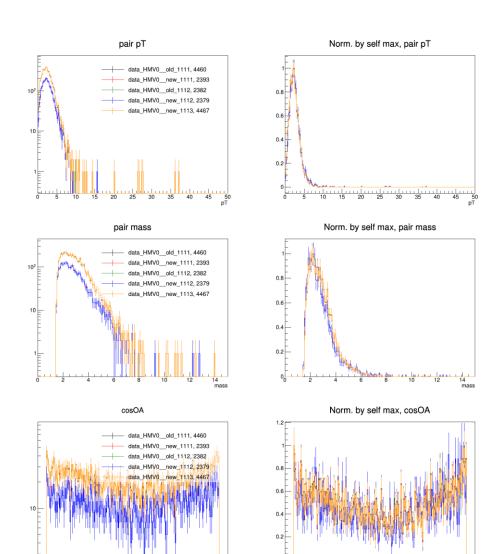
- e-Xi pair yields
 - a. After online + offline selection
 - b. Matched conditions to old code(* Changes for new code are NOT applied)
 - c. Notable yields difference

Comparison 2/3



- e-Xi pair yields
 - a. The difference looks arise at Grid runinng
 - b. Found AliPhysics version difference:
 - b-1. Old: "vAN-20210701_ROOT6-1"
 - b-2. New: "vAN-20220701_ROOT6-1"
 - c. Ran another Grid jobs:
 - c-1. Old: "vAN-20210701 ROOT6-1"
 - c-2. New: "vAN-20220701_ROOT6-1"
 - Results look consistent when same
 AliPhysics version applied

Comparison 3/3



- e-Xi pair yields
 - a. The difference looks arise at Grid runinng
 - b. Found AliPhysics version difference:
 - b-1. Old: "vAN-20210701_ROOT6-1"
 - b-2. New: "vAN-20220701_ROOT6-1"
 - c. Ran another Grid jobs:
 - c-1. Old: "vAN-20210701 ROOT6-1"
 - c-2. New: "vAN-20220701_ROOT6-1"
 - d. Results look consistent when sameAliPhysics version applied
 - e. Final xCheck: applied 20210701 for new code
 - i.e., New: "vAN-20220701_ROOT6-1"

Backup

Structure change for online selection code (AliAnalysisTask...)

Old

Event selection

- Apply cuts (multiple return statements)If (IsMC) {...}

Cascade loop

- Apply cuts (FilterCascade())

Track loop

- Apply cuts (FilterTrack())
- Save event info (to tree)

Make e-Xi pairs

- Save cascade info
- Apply cuts (FilterElectron())
- Fill tree:
- a. data
- b. MC (after additional cuts)

New

Event selection

- Apply cuts (multiple return statements)
- If (!IsMC) { ... save event info (to tree) }
 else { ... Require nXic0>0, save event info }

Cascade loop

- Apply cuts (FilterCascade())
- * updated decay length / p-pi swap
- Save info

Track loop (for electron)

- Apply cuts (FilterTrack(),
 FilterTrackElectron(), e+e- minM > 0.05)
- Save info
- Fill tree (if nXi > 0 && nElec > 0)