

Status Weekly Ξ_c^0 analysis meeting, July 23, 2020

- **Current status**

- Following analysis steps

- a. Ran previously cross-checked codes (Jinjoo's code + steering macro) on Grid, using entire LHC17mAOD
- b. Tested later analysis code (MakeROOTResultXic0.C) on above output
- c. Still need to study the codes received so far

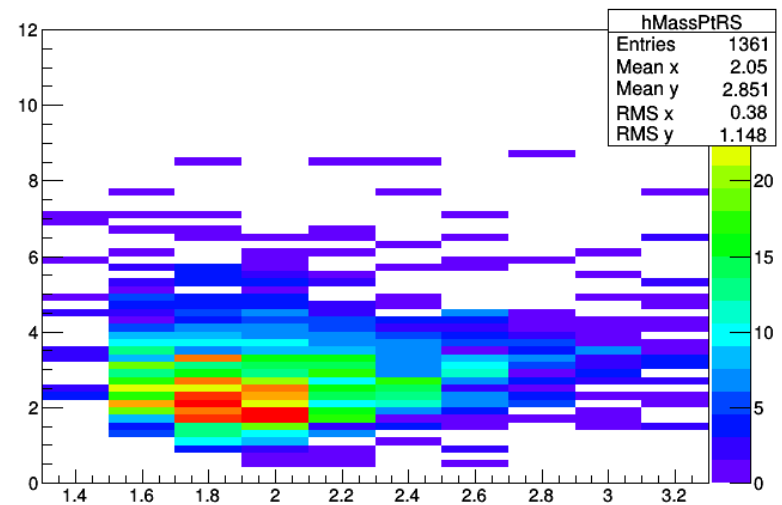
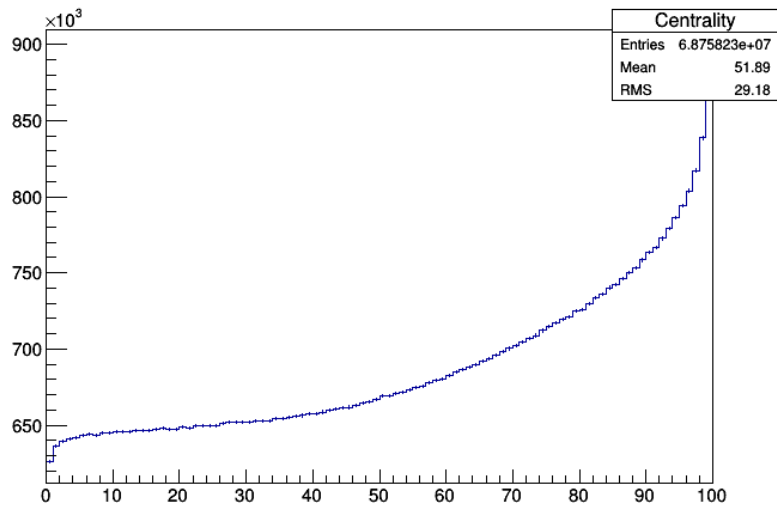
- Implement additional items on original codes

- a. Added centrality branch:
cross checked w/ already existing Centrality histogram – exactly match
- b. Implemented additional trigger features:
original code uses only minBias (kINT7),
but I'm preparing for additional HM triggers (HM_V0, HM_SPD)

Following steps Sample output

- **Sample output**

- Jinjoo's code (AliAnalysisTaskSEXi0c...) by using entire LHC17mAOD:
Centrality plot from AnalysisResults.root (left)
- Run MakeROOTResultXic0.C on above output:
hMassPtRS plot from DataAnalysisHistogram.root (right)



Implement triggers Modify original codes

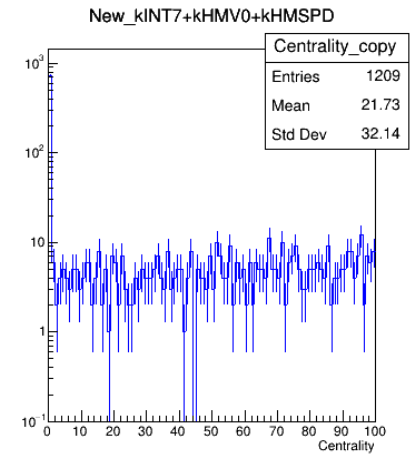
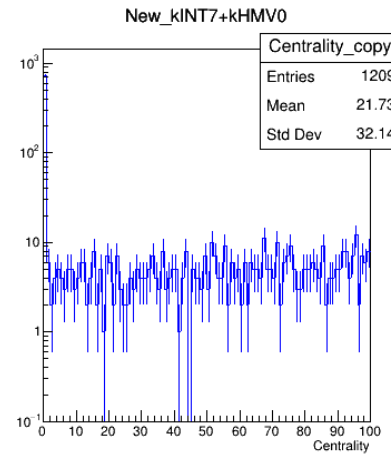
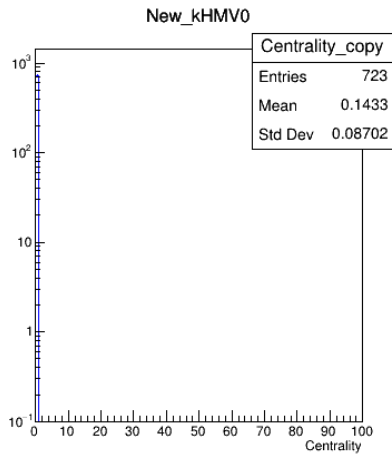
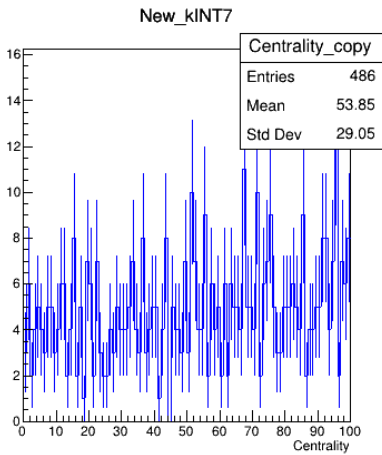
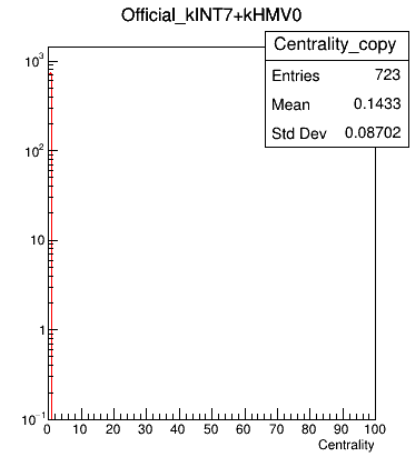
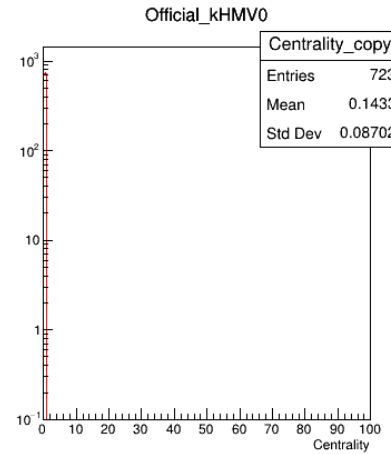
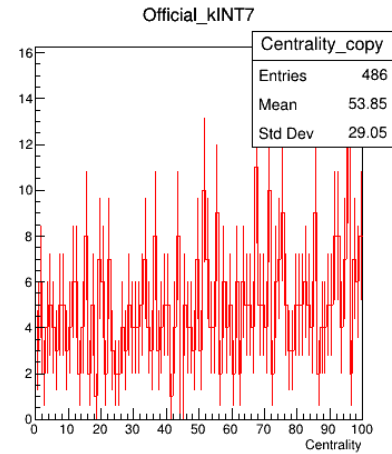
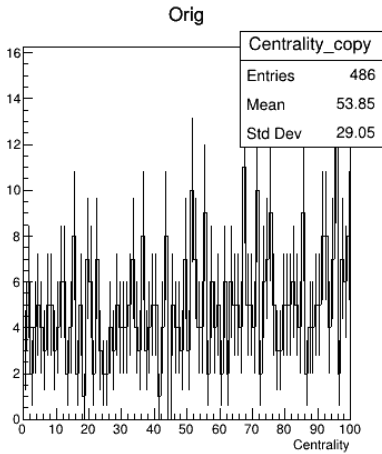
- **Modify original codes to implement HM triggers**
 - **Original code only deals w/ minBias** (*kINT7 = BIT(1), // VOAND trigger, offline V0 selection*)
 - a. A study was suggested to separate its (MB) centrality percentile into two (0.1-30% and 30-100%)
→ Thus Centrality variable need to be saved (**DONE**)
 - b. The topic can be repeated w/ high multiplicity triggers:
 - b-1. HM_V0 (AliVEvent::kHighMultV0)
 - b-2. HM_SPD (AliVEvent::kHighMultSPD)
 - * There's possibility of these two triggers are dealt together as kHighMult
(<https://gitlab.cern.ch/cbourjau/AliRoot/blob/1053eebaa381a95f283c66466801cff2dd4e3a5c/STEER/STEERBase/AliVEvent.h>)
 - * At least above two aliases does NOT make trouble during the code running
 - **Looked for a way to implement multiple triggers simultaneously**
 - a. Plan to accept events if any of above 3 triggers fired, then distinguish it in offline analysis
 - a-1. Target triggers should be tested in OR condition during the event selection (**DONE**)
 - a-2. Trigger bit should be saved to distinguish fired trigger in offline analysis (**ONGOING**)
 - b. There's an official method (*AliAnalysisTaskSE::SelectCollisionCandidates()*)
to select events by a trigger, but it looks it cannot be used for multiple triggers in OR condition

Implement triggers To use high multiplicity triggers

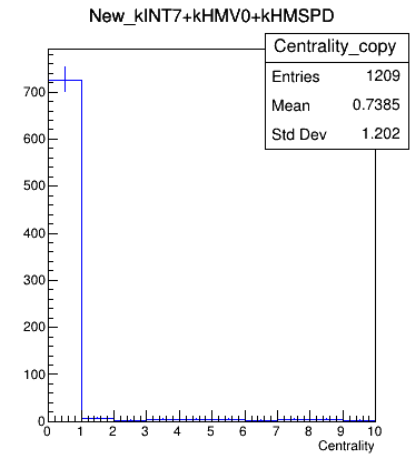
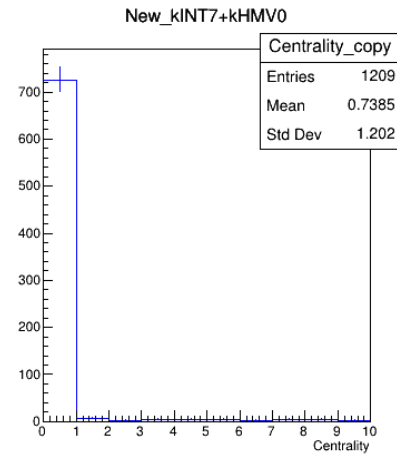
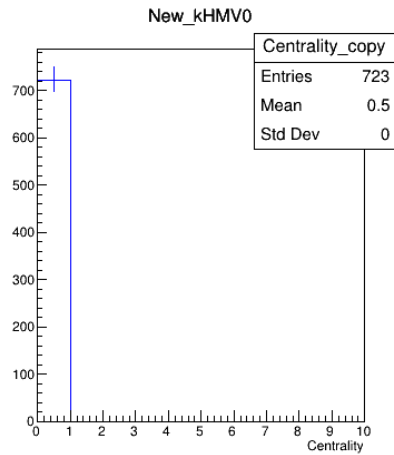
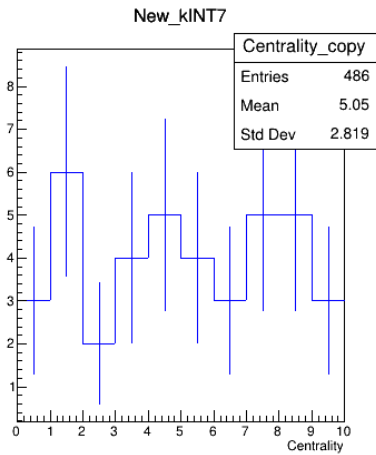
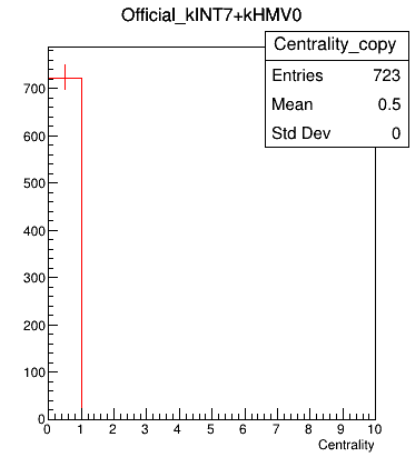
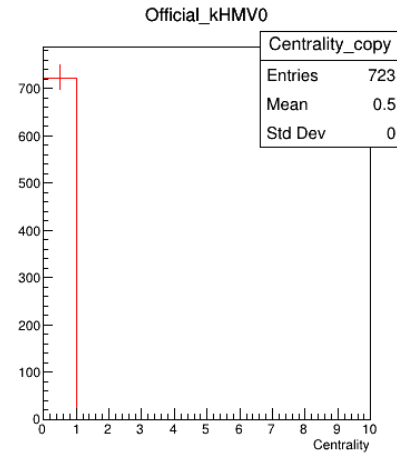
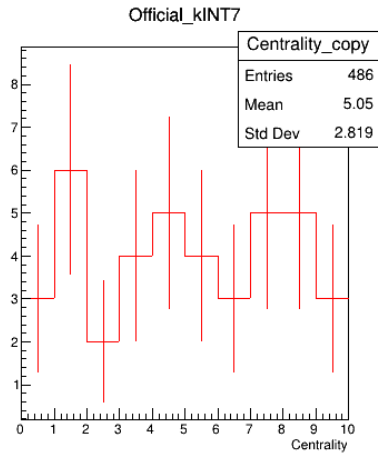
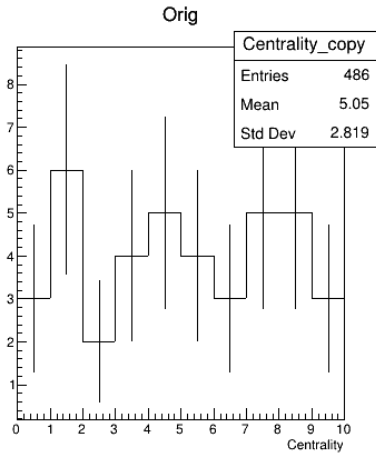
- **Tests**

- By method
 - a. Jinjoo's code (kINT7 only) – base sample, prefix 'Orig' or 'jseo'
 - b. Official method (SelectCollision....), prefix 'Official'
 - c. My own implementation (modification on original analysis code), prefix 'New'
 - * minBias selection part in Original code was masked out when testing b. and c.
- By environment
 - a. Local (in KIAF w/ one sample AOD file)
 - b. Grid (run 279000, used segment 6 to comparison)

Implement triggers Test results, by using a sample AOD on KIAF

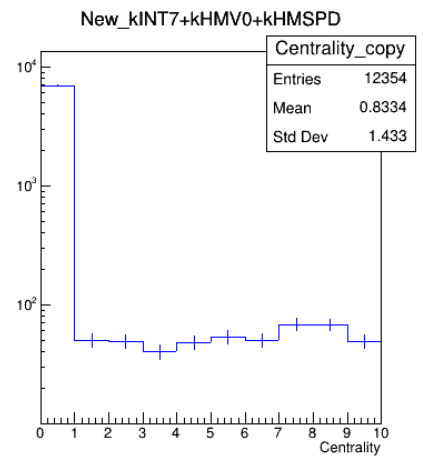
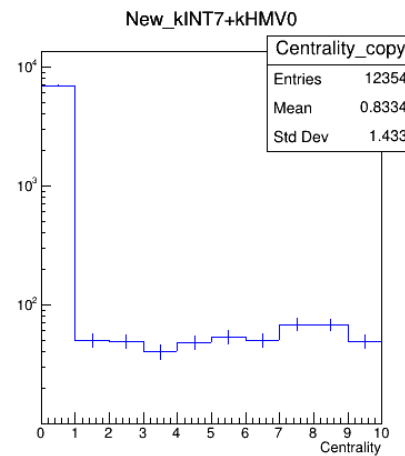
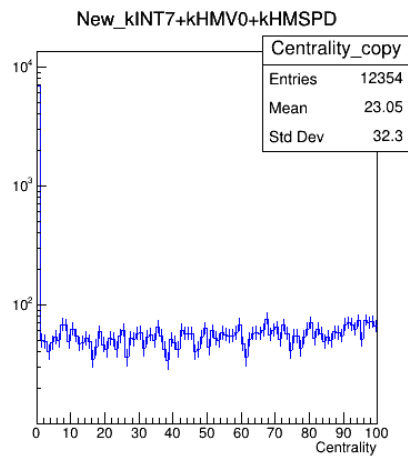
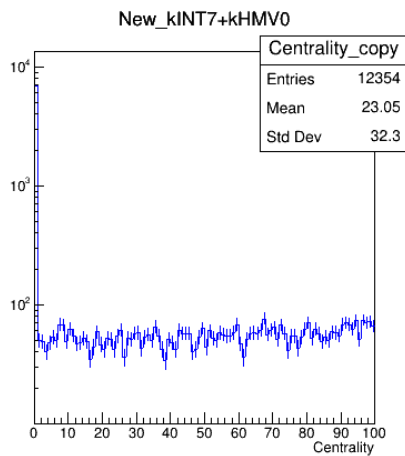
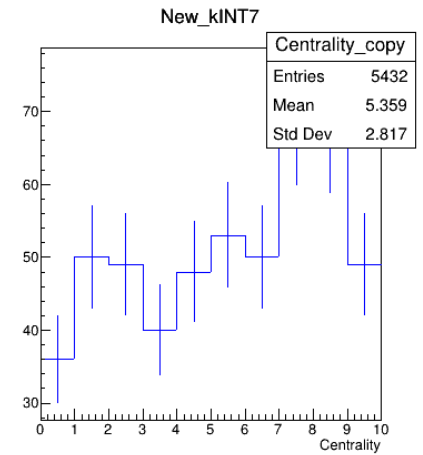
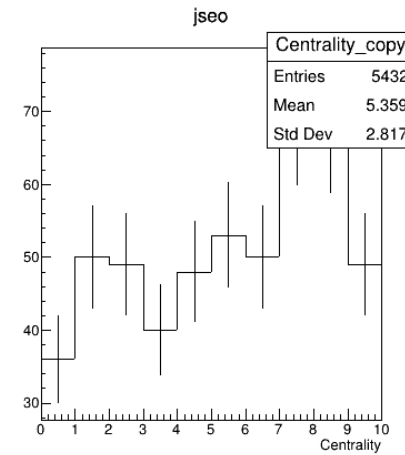
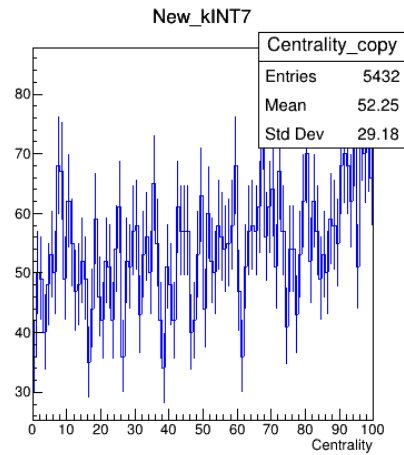
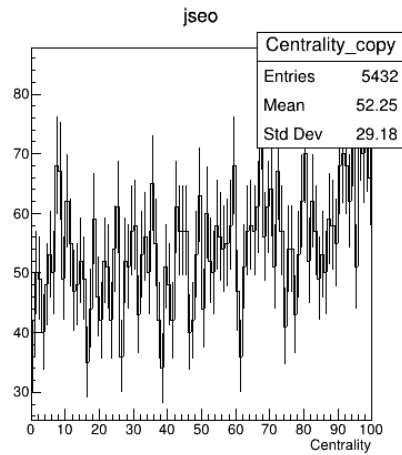


Implement triggers Test results, by using a sample AOD on KIAF, zoom



Implement triggers Test results, by using a seg of run 279000, on Grid

* **Official** method was NOT tested on Grid



Backup

Quote from VOM percentile studies (by B. Volkel, D2H, June 26)

