

# Weekly report

2019.01.08. Sora Oh

# How to make root file

- Open a file and define histograms :  
RunAction::BeginOfRunAction()

- Fill values:

EventAction::EndOfEventAction()

Run::RecordEvent()

- Write and close file:

RunAction::EndOfRunAction

# Define n-tuple

- `#include "Analysis.hh"`
- `void RunAction::BeginOfRunAction(const G4Run* run){`
- `// Create/get analysis managerG4AnalysisManager*`  
`analysisManager= G4AnalysisManager::Instance();`
- `analysisManager->SetVerboseLevel(1);`
- `// Open an output file`
- `analysisManager->OpenFile("Tutorial");`
- `// Creation of ntuple`
- `analysisManager->CreateNtuple("HCEnergy");`

# Fill column

- `#include "Analysis.hh"`
- `void EventAction::EndOfEventAction(const G4Event* event)`
- `auto analysisManager= G4AnalysisManager::Instance();`
- `auto hce= anEvent->GetHCofThisEvent();`
- `HadCalorimeterHitsCollection* hcHC`  
`= static_cast<HadCalorimeterHitsCollection*>(hce->GetHC(fHCHCID));`
- `fHCHCID = sdManager->GetCollectionID("HadCalorimeter/HadCalorimeterColl");`

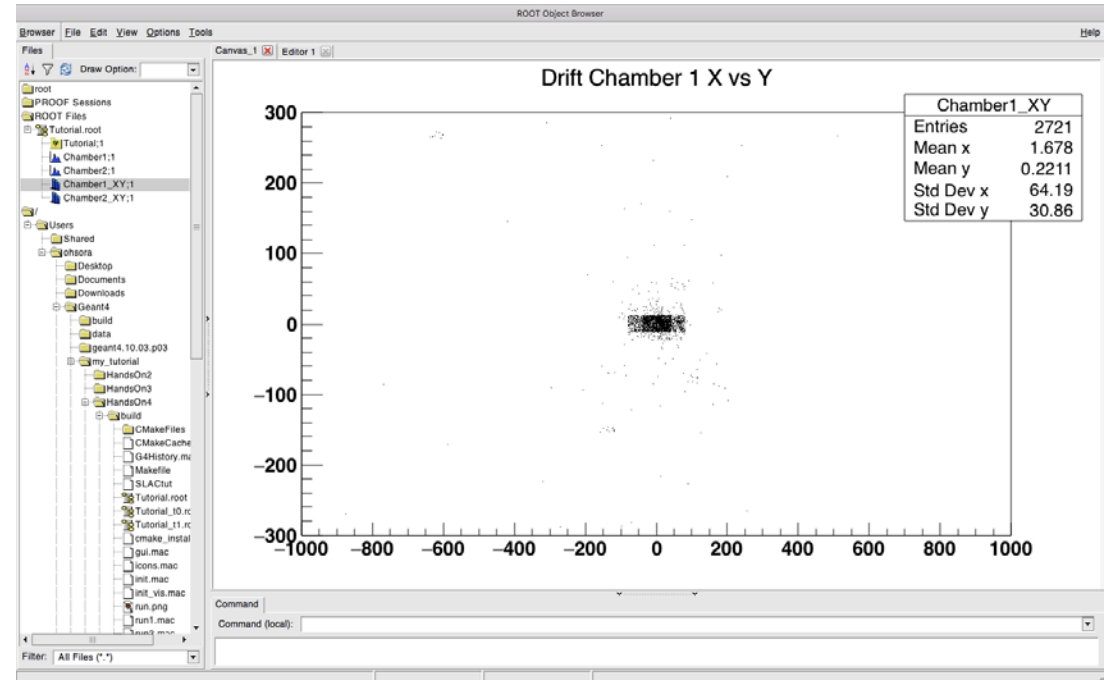
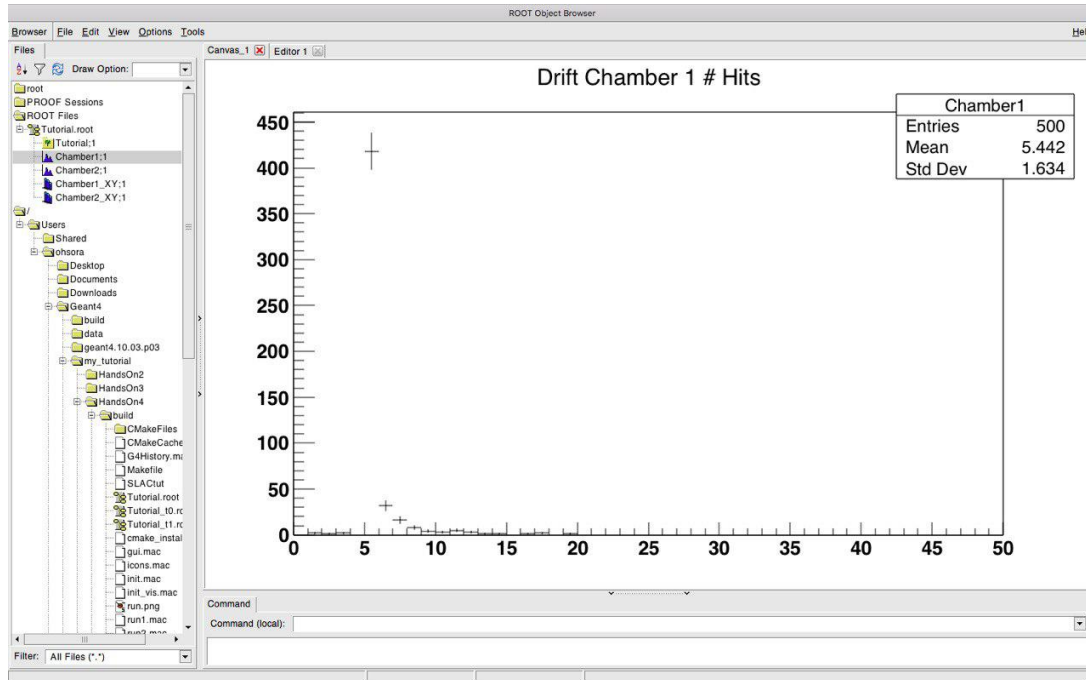
# Fill column

- `G4int totalHadHit = 0;`
- `G4double totalHadE = 0;`  
  `for (G4int i=0;i<20;i++)`  
  `{HadCalorimeterHit* hit = (*hcHC)[i];`  
  `G4double eDep = hit->GetEdep();`  
  `If (eEdp>0){`  
  `totalHadHit++;`  
  `totalHadE +=dEdp;}}`

# Write and close

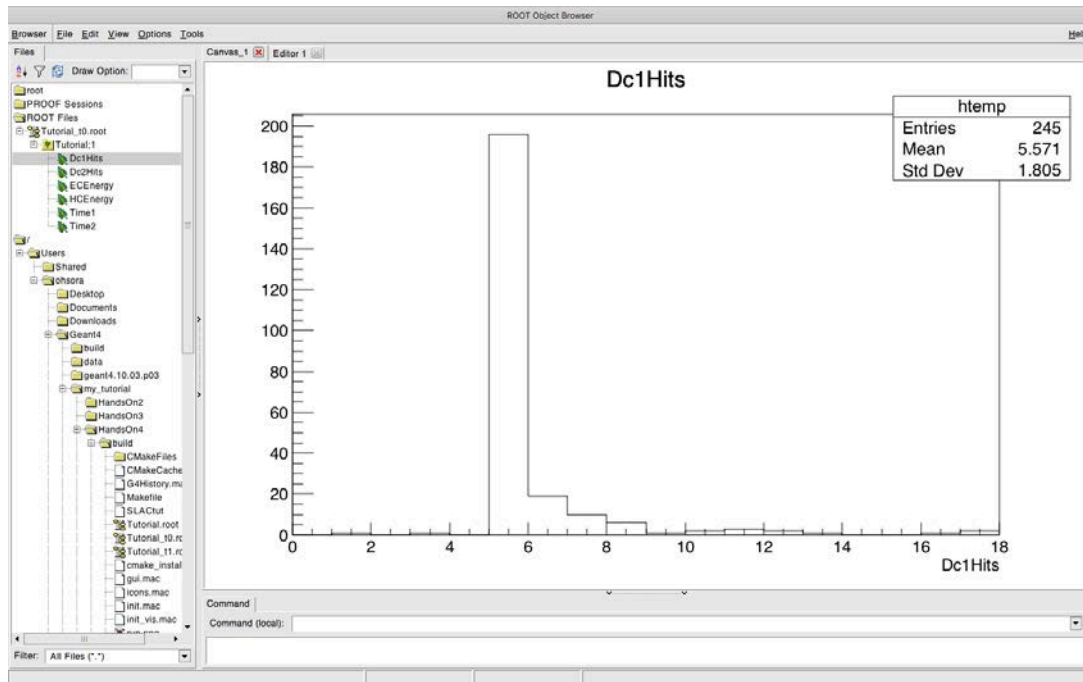
- `#include "Analysis.hh"`
- `RunAction::EndOfRunAction(const G4Run* run){`
- `If ( myrun ){`
- `G4int nEvents = myrun->GetNumberOfEven();`  
`if ( nEvents < 1 ){`
- `G4double had_ene = myrun->GetNumberOfEvent();`
- `G4AnalysisManager* analysisManager =`  
`G4AnalysisManager::Instance();`
- `analysisManager->Write();`
- `analysisManager->CloseFile();`
- `}`

# Tutorial.root

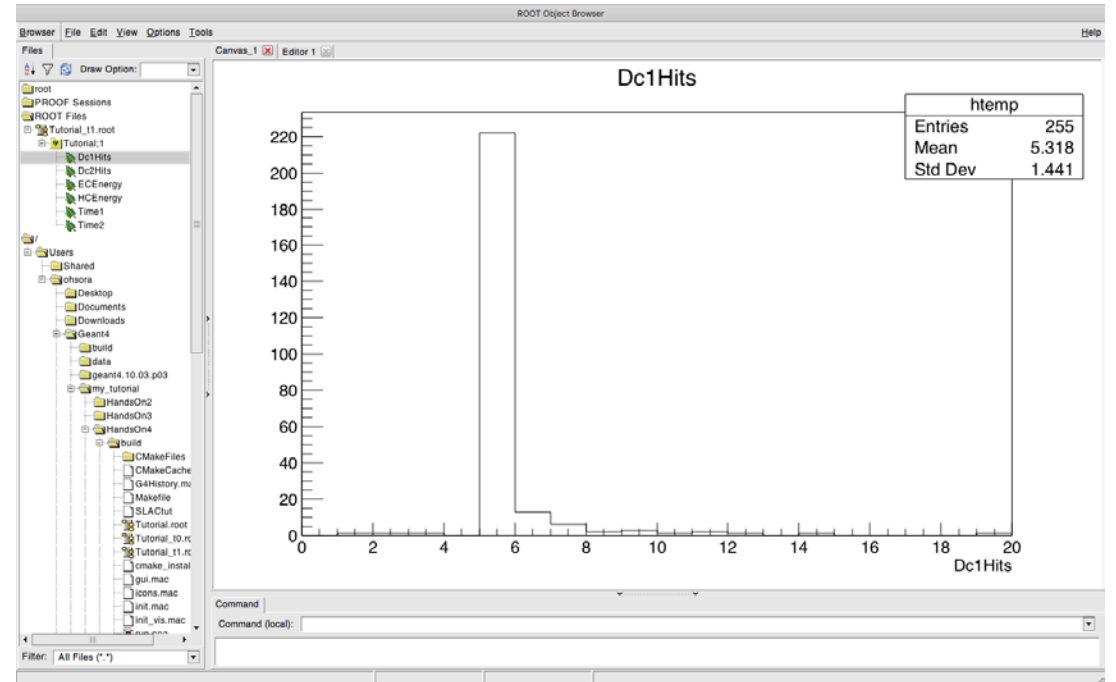


# Root file

## Tutorial\_t0.root



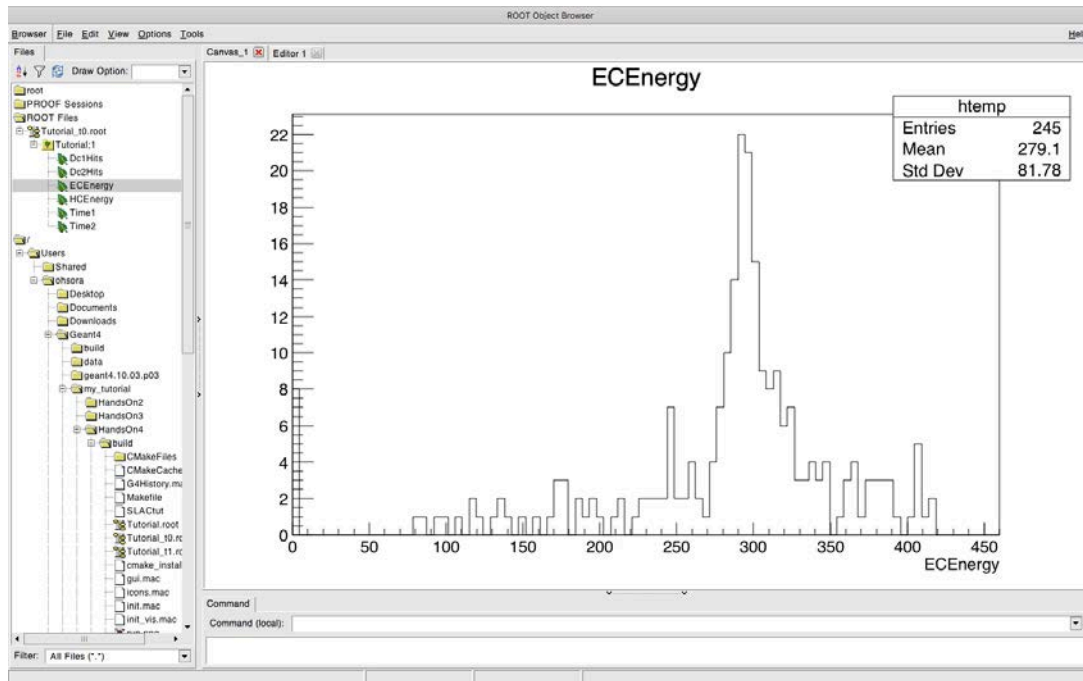
## Tutorial\_t1.root



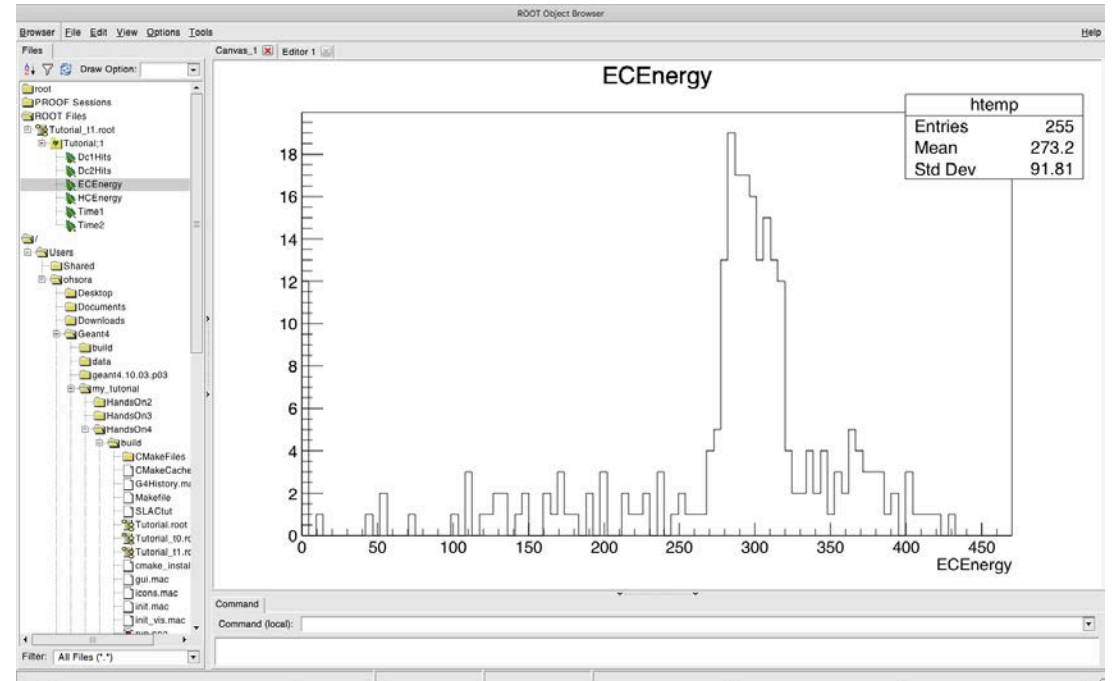


# Root file

## Tutorial\_t0.root

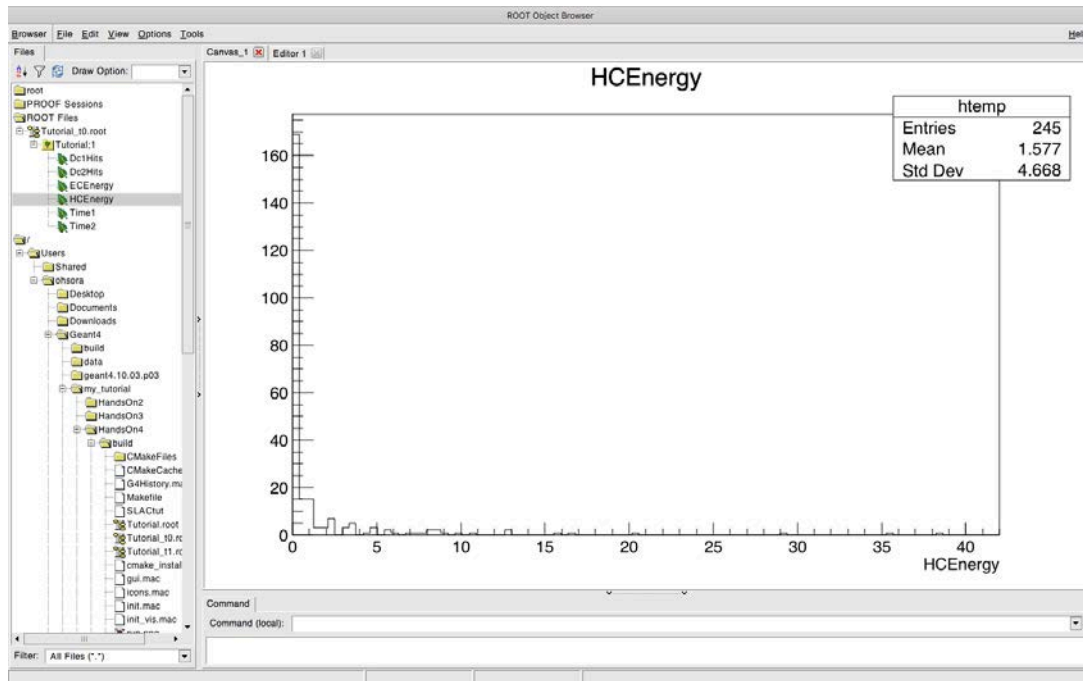


## Tutorial\_t1.root

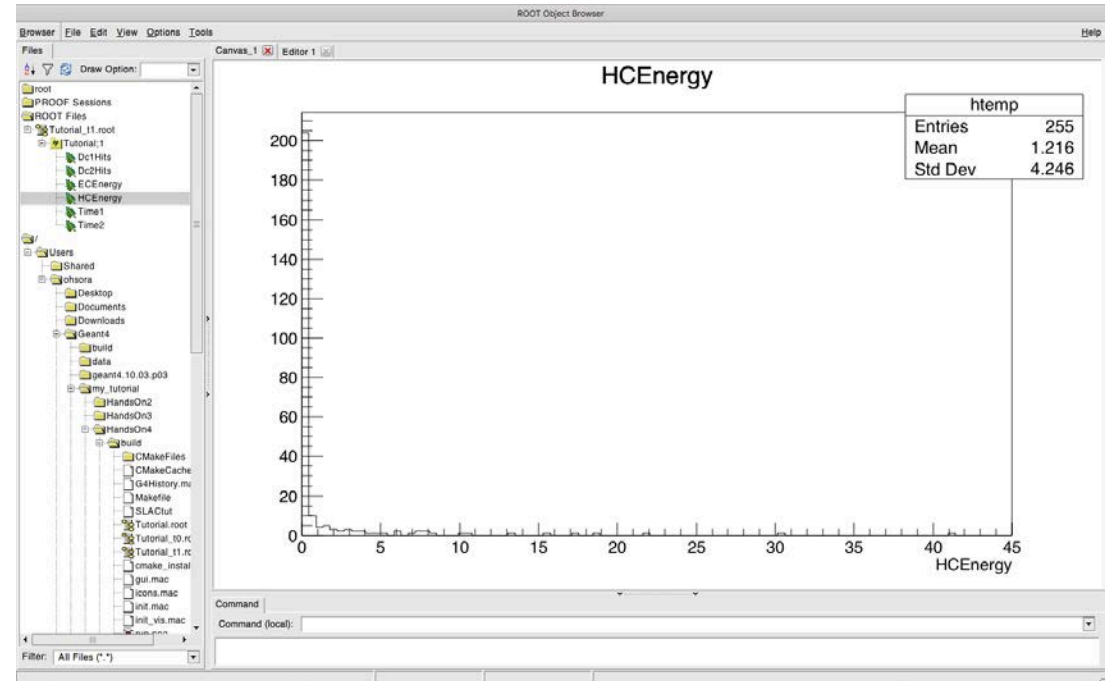


# Root file

## Tutorial\_t0.root

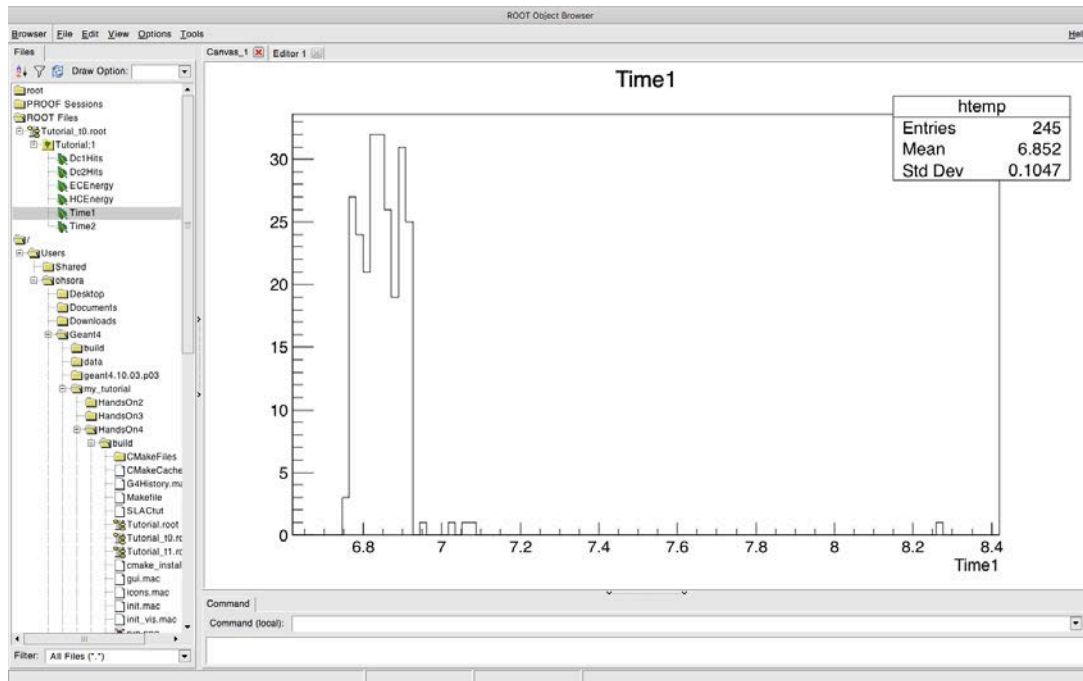


## Tutorial\_t1.root



# Root file

## Tutorial\_t0.root



## Tutorial\_t1.root

