Report_170524

Energy Deposit on Barrel

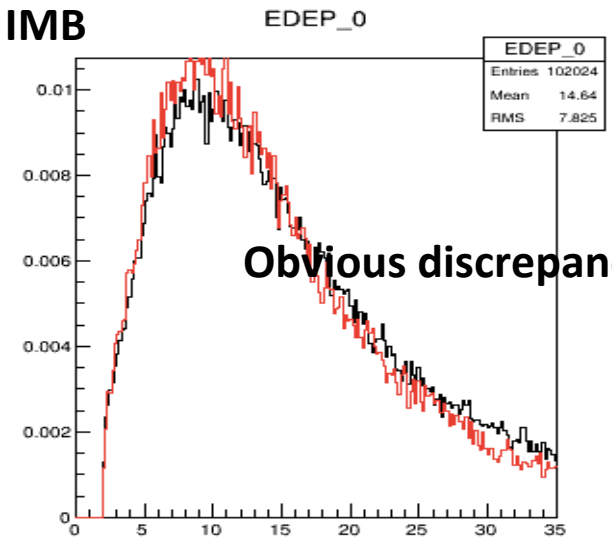
- With clear gamma selection, signal from gamma interaction can be obtained
- As a basic signal, deposited energy is measured
- With reconstruction of incident gamma energy, Sampling Fraction also can be obtained

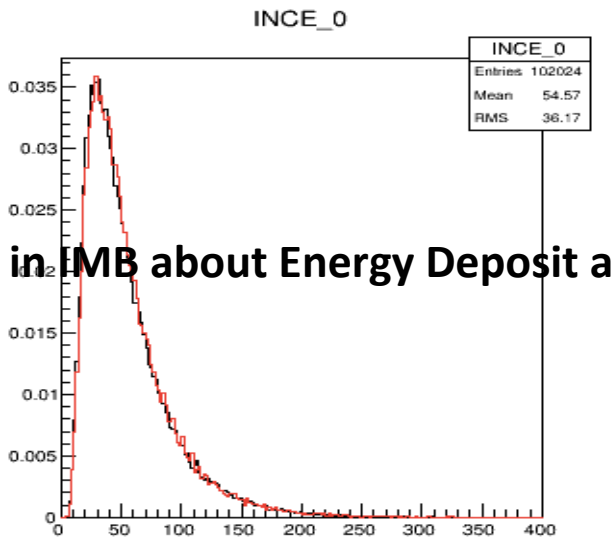
Data : Run65 Min. bias trigger (Black)

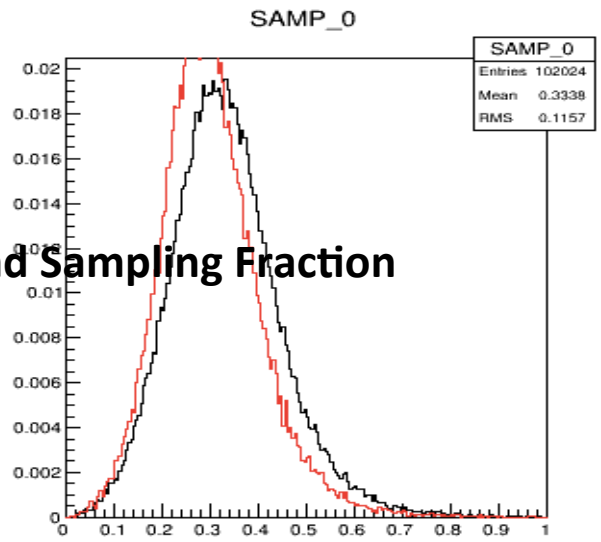
M.C. : KL3pi0 with Run65 Acc. (Red)

Deposited energy, Incident energy

IMB

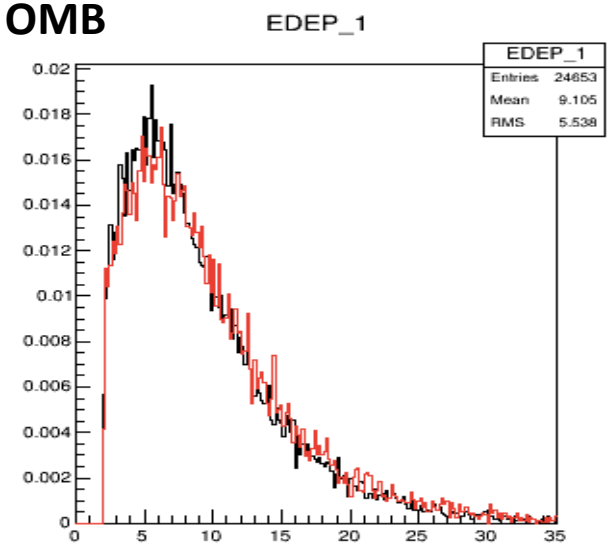


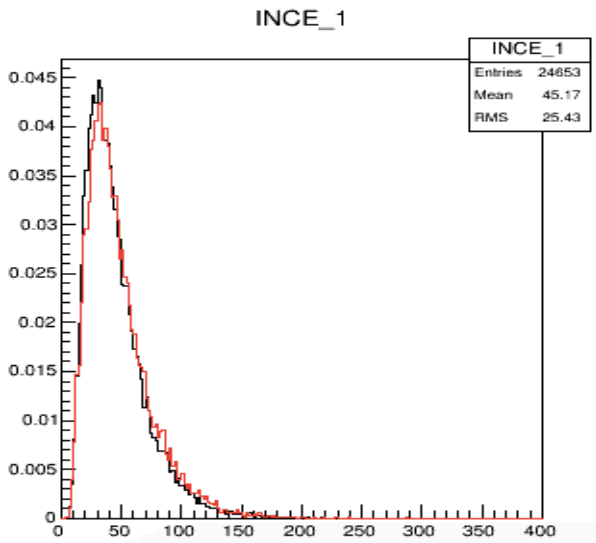


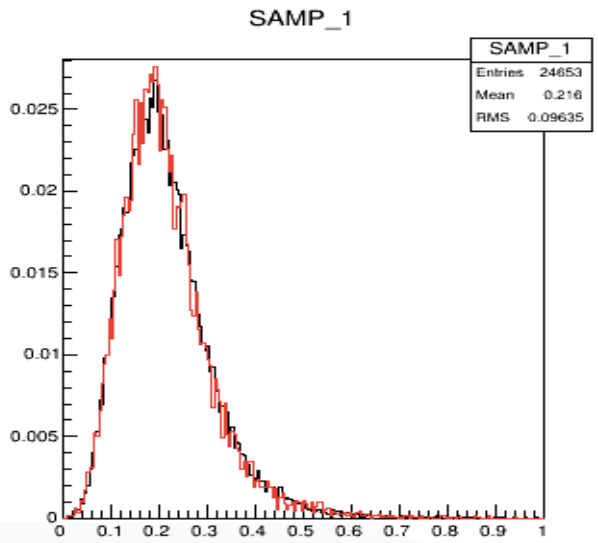


Obvious discrepancy in IMB about Energy Deposit and Sampling Fraction

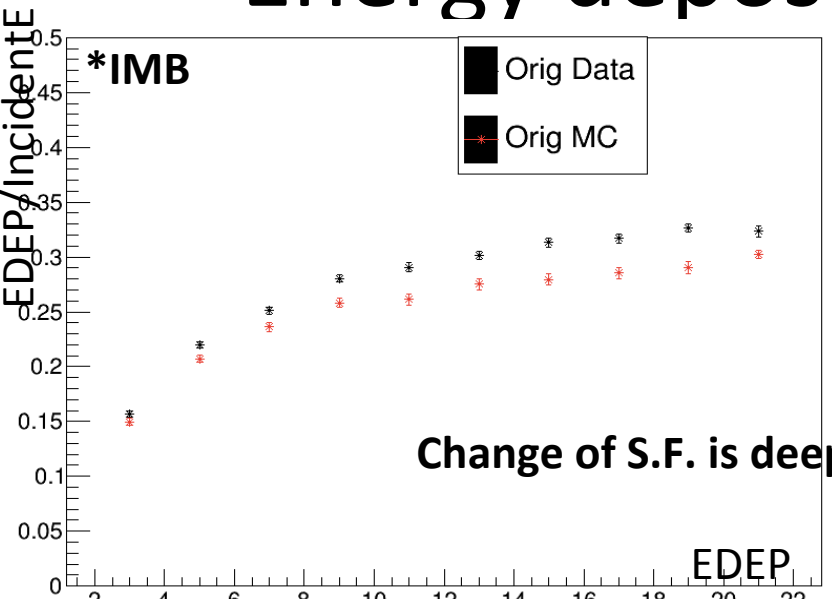
OMB

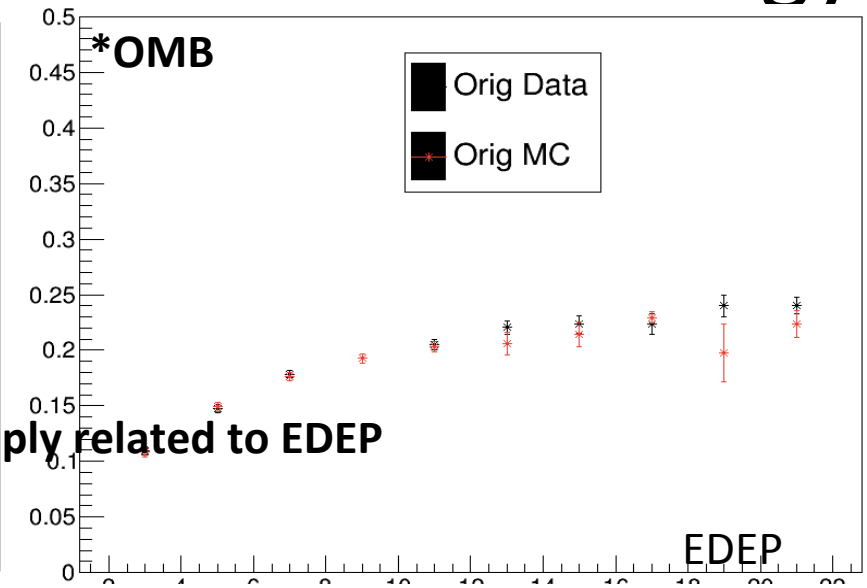




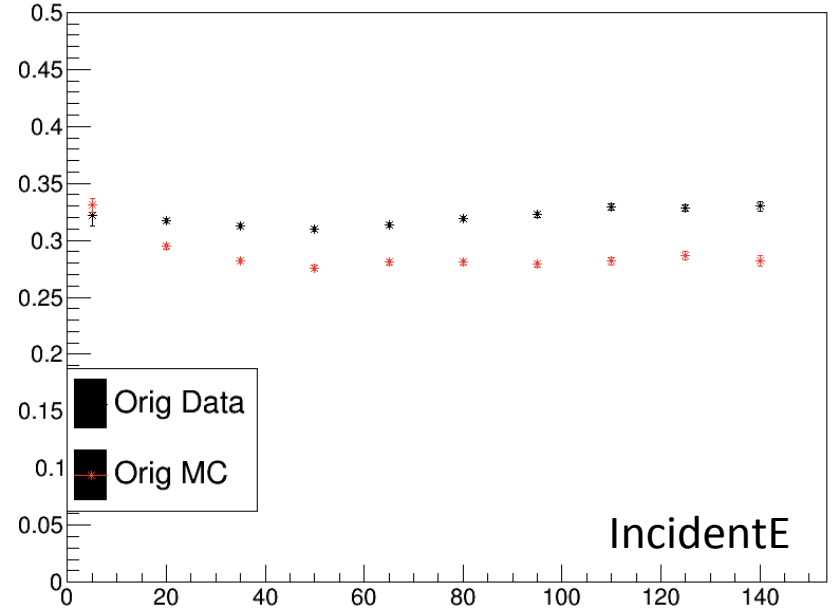


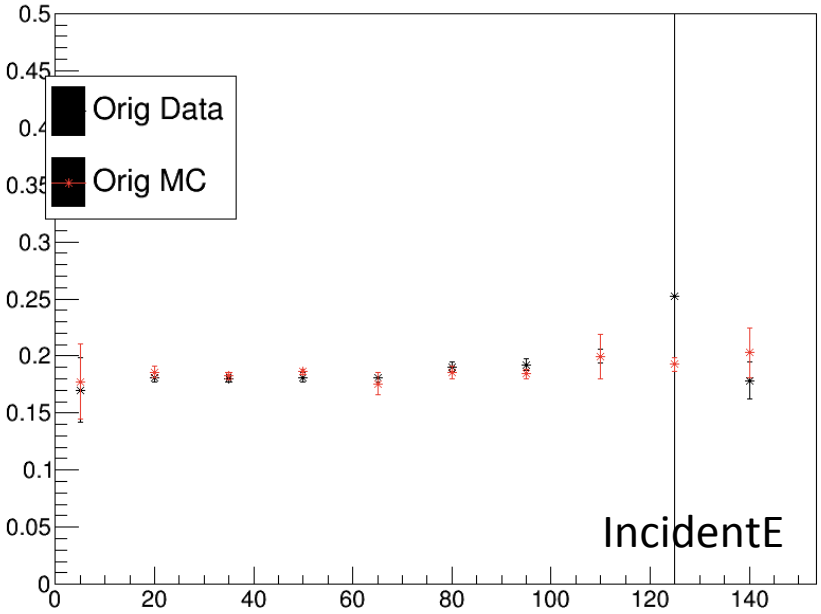
Sampling Fraction with regard to Energy deposit & Incident energy





Change of S.F. is deeply related to EDEP

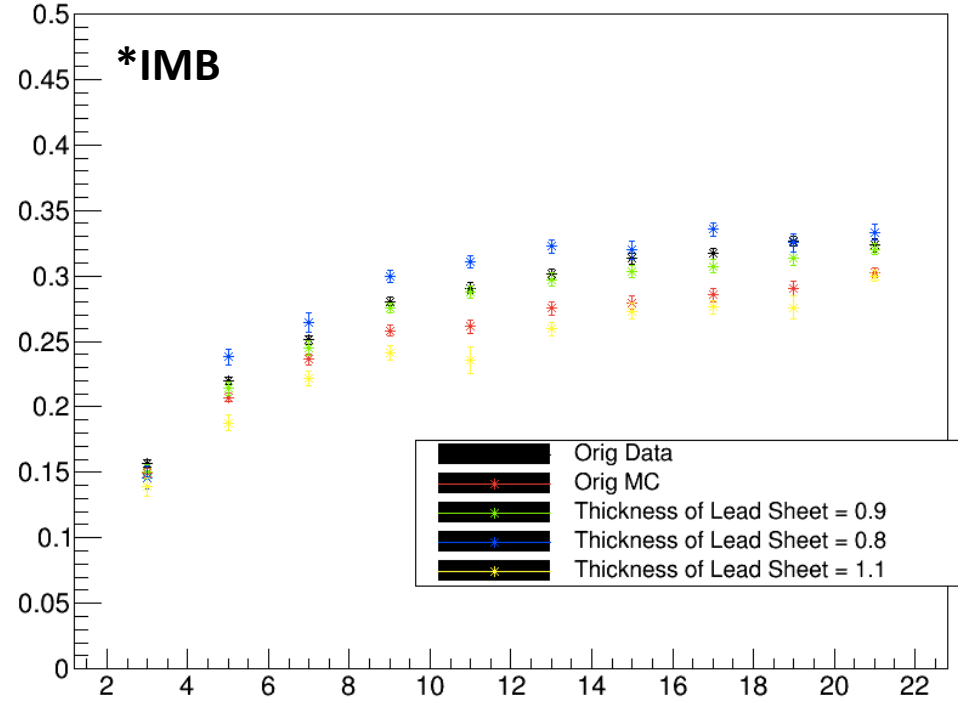


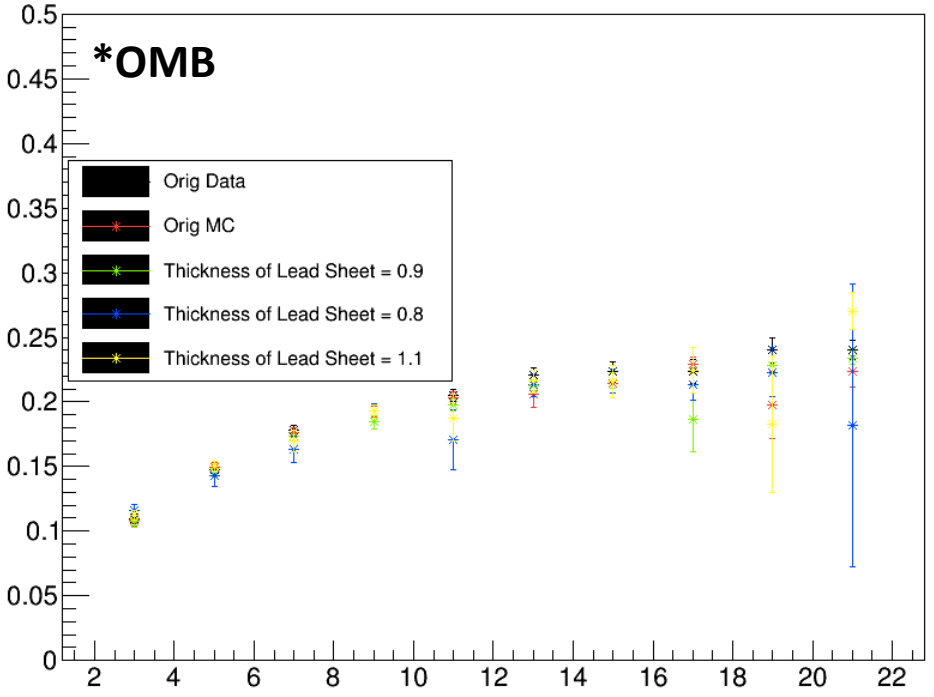


Trials to make consistency

- 1) change of Lead sheet
  - For not making any bugs, total thickness of Lead sheet and reflector is same
    - Thickness of Lead sheet = 1.0mm
    - Thickness of reflector = 0.188mm
      - Lead sheet + 0.1mm = reflector – 0.05mm
- 2) application of some scale factors to data (and M.C.)
  - From DST level, scale factors are given.
  - It has same effect as changing calibration factor

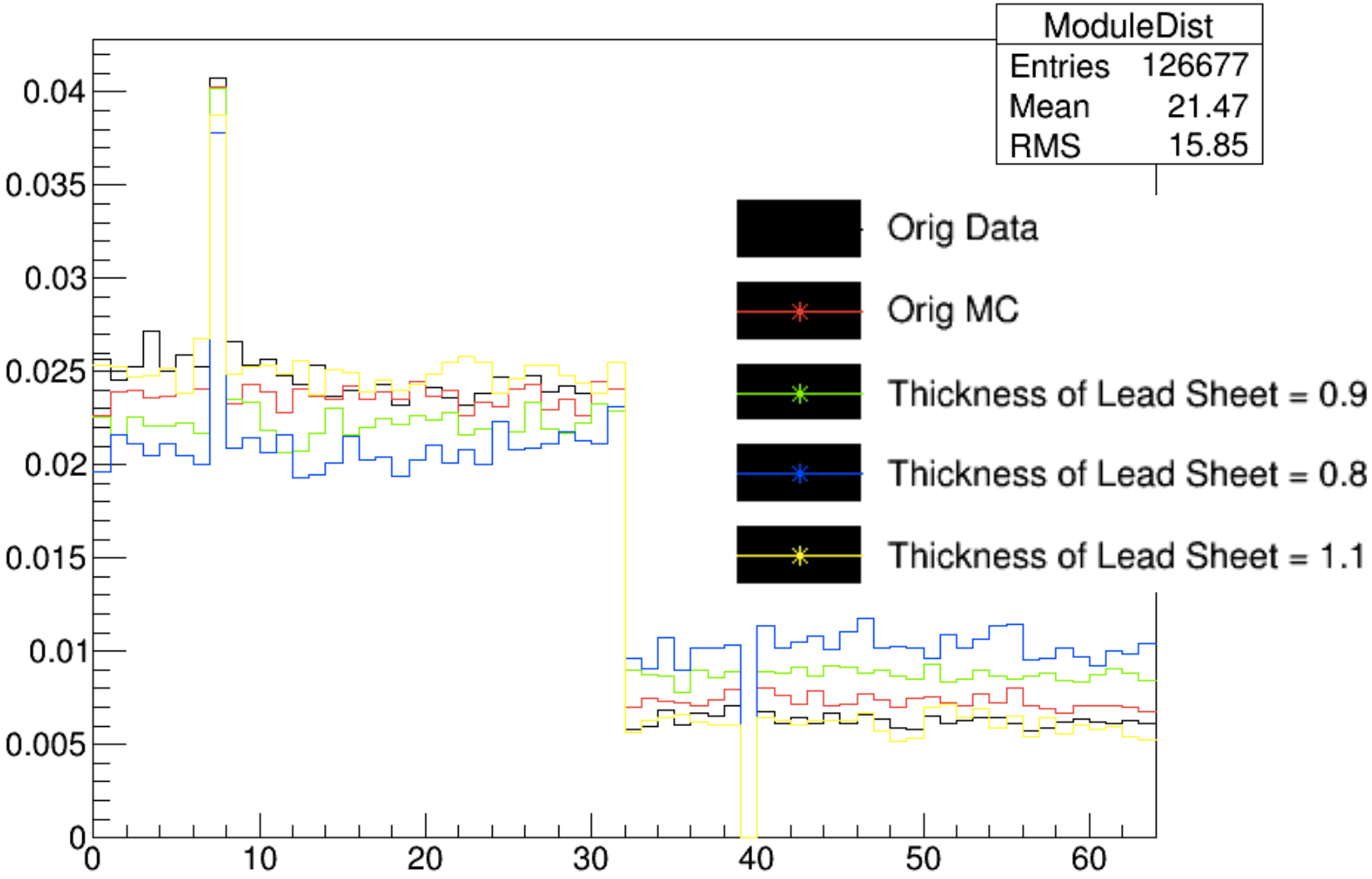
Change of Lead sheet



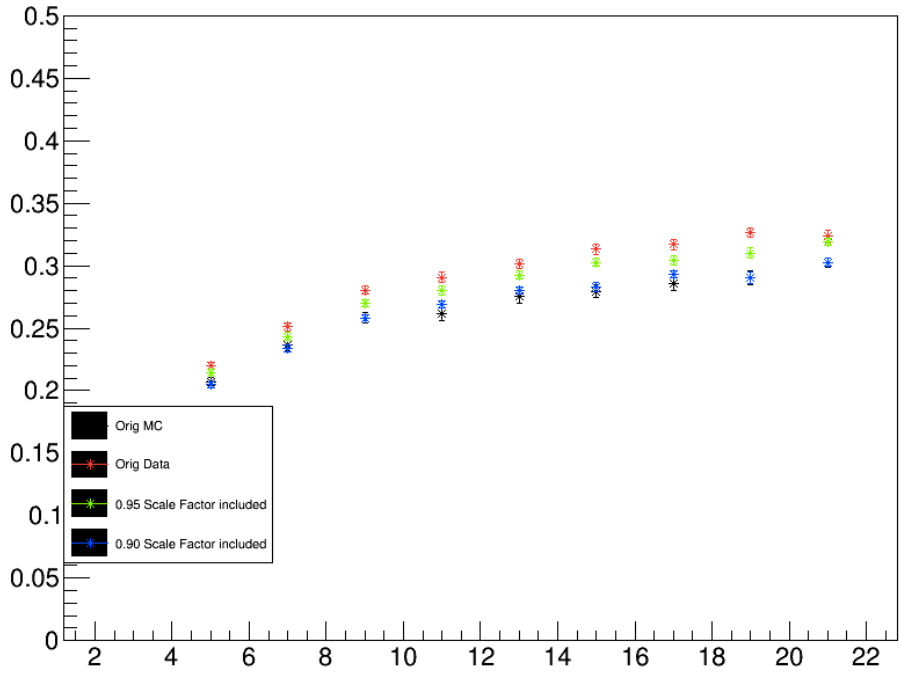


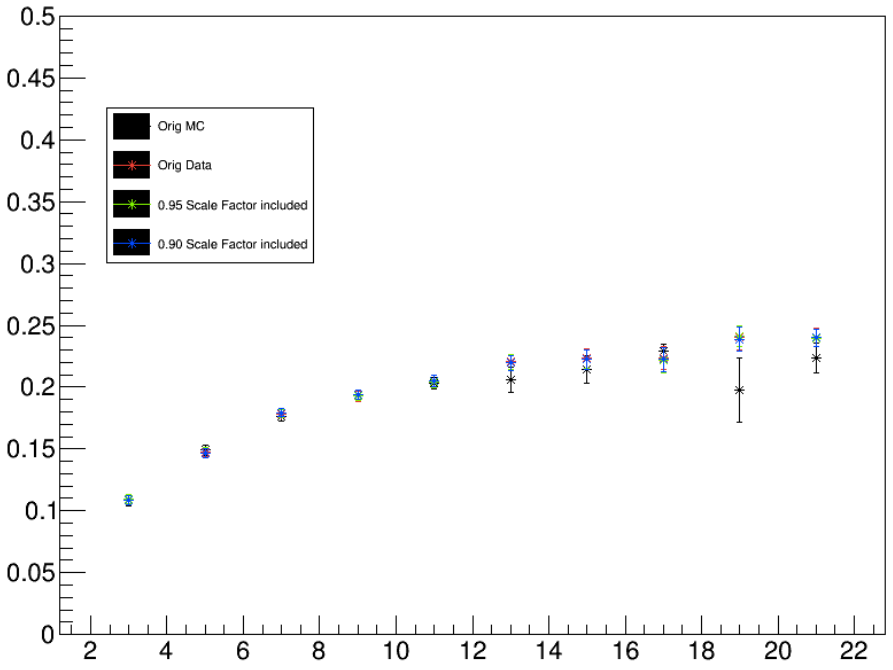
- Simulation with 0.9mm thickness looks having good consistency with data

Hit Distributions



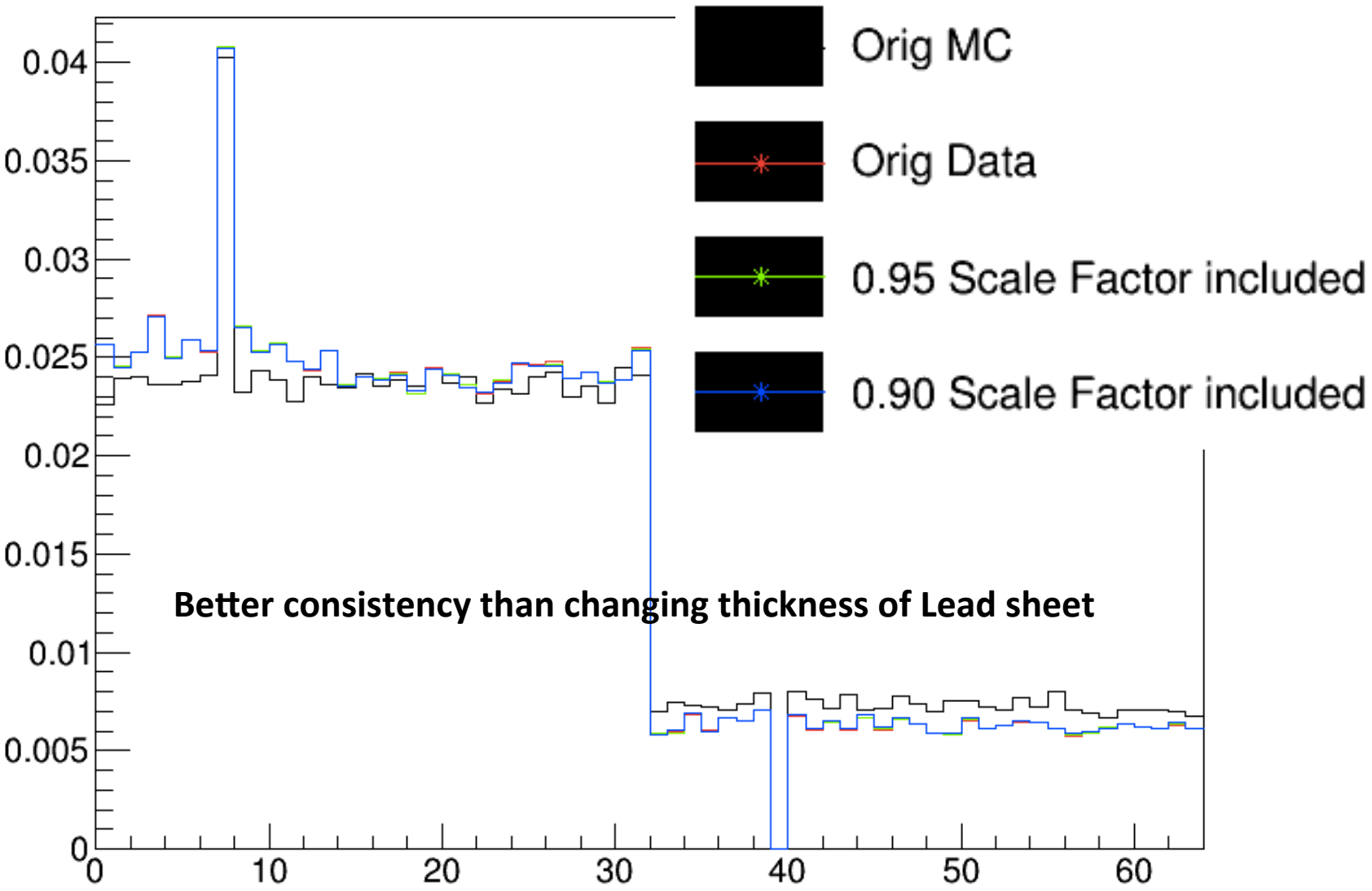
Scale Factors





- Application of Scale Factor of 0.9 looks having good consistency with M.C.

Hit Distributions

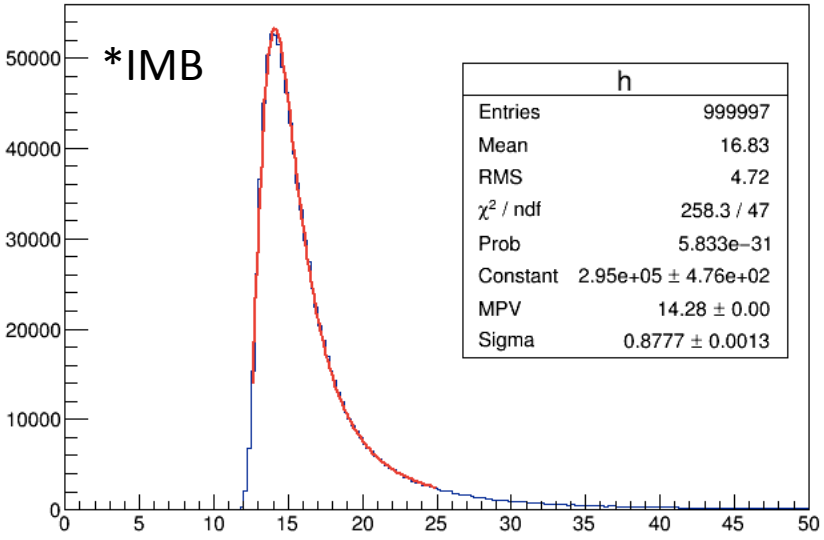


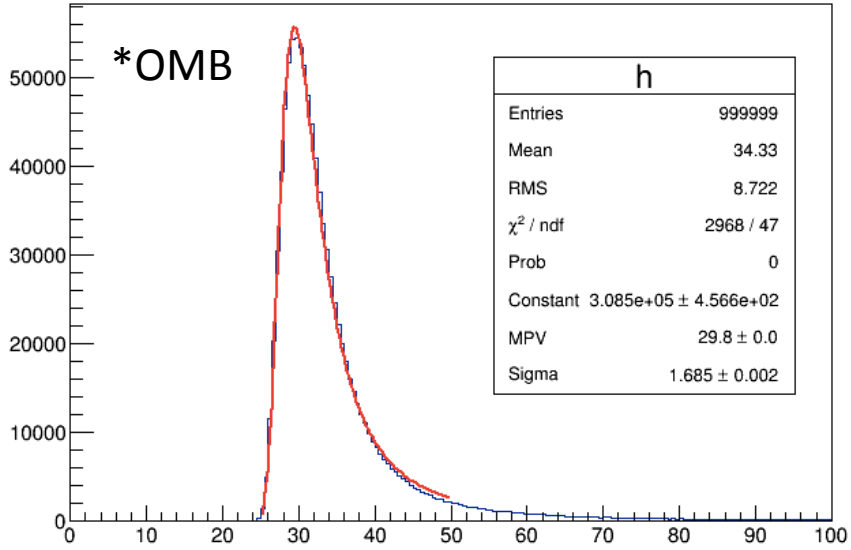
Check of MIP of Cosmic-Ray

- With 2 kinds of versions
  - 1st version : Muon-Ray with mono-momentum
  - 2nd version : Muon-Ray with momentum distribution & Position distribution
    - Using CosmicSpectrum function in e14lib
- General Process of M.C.
  - Gsim
  - Gsim2dst (attenuation & pulse shaping included)
  - CosmicAna
    - Same as calibration code
    - Get the MIP @ Center of detectors
    - Also True energy deposited can be seen (in ver1)

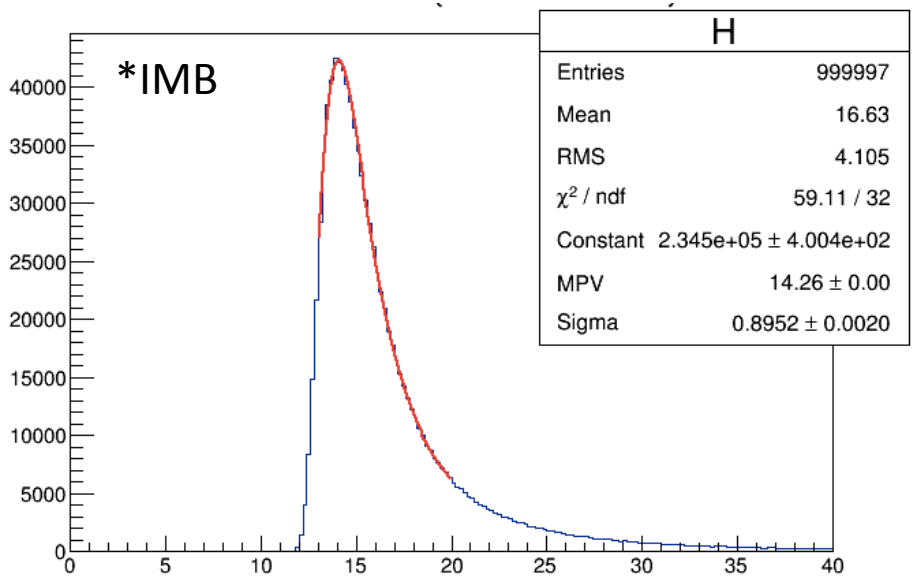
M.C. version 1

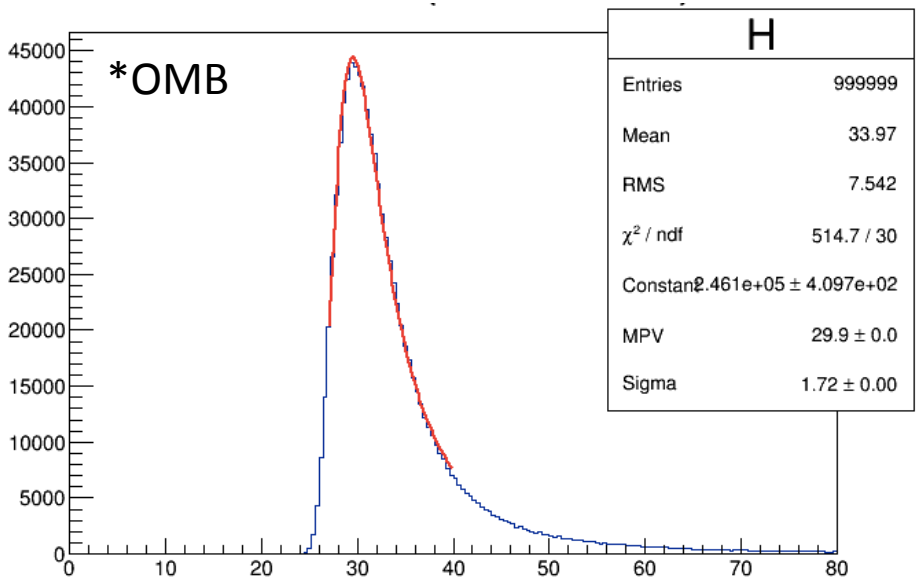
- Shoot Muon
  - Generation Position : 0, 2m, 4.073m
    - Center of MB
  - Momentum Direction : 0, -1, 0



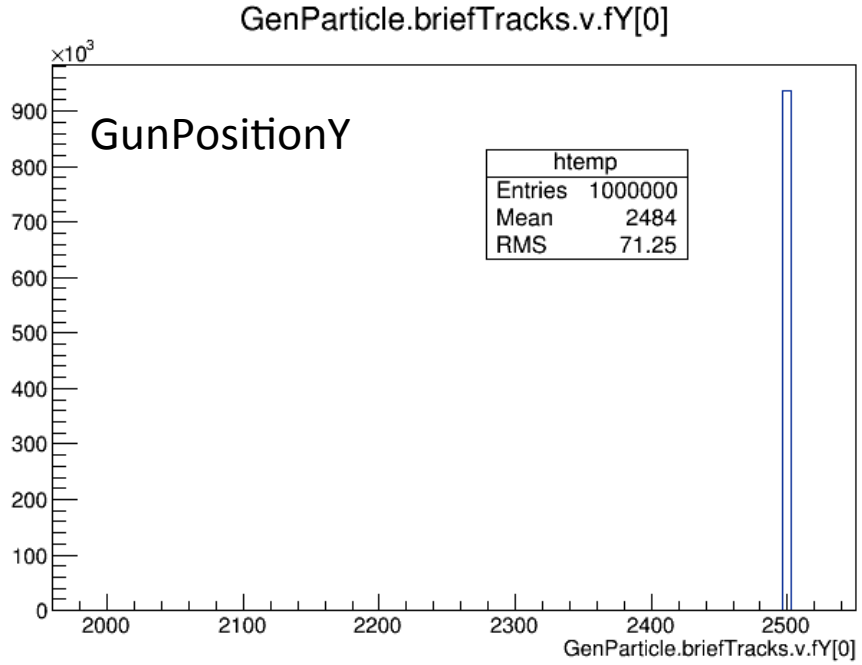


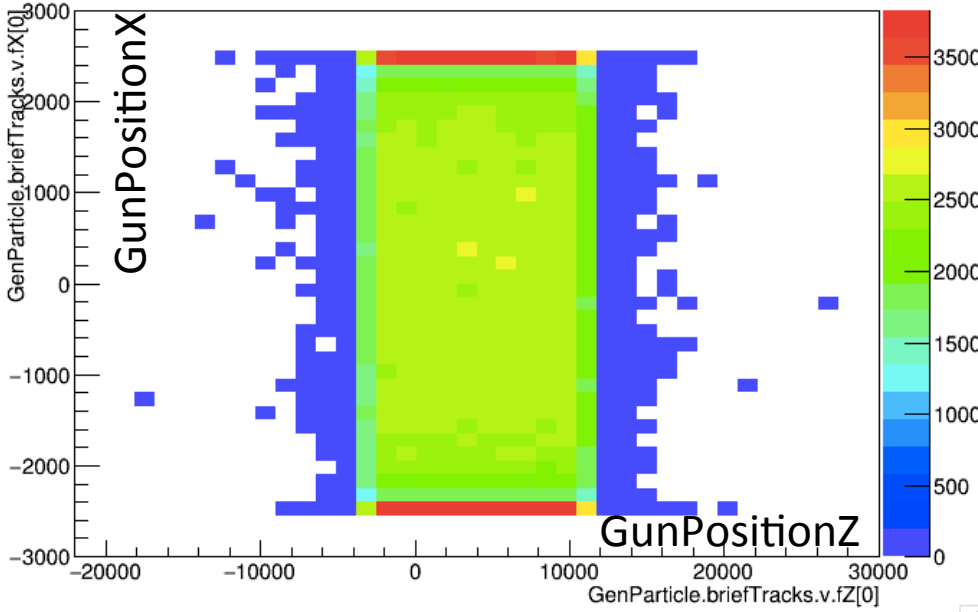
True energy deposit

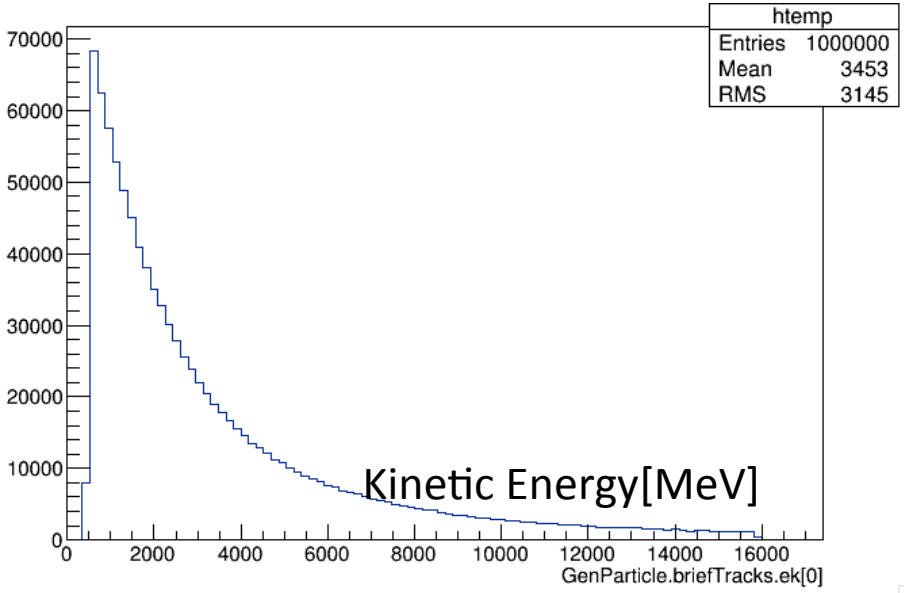


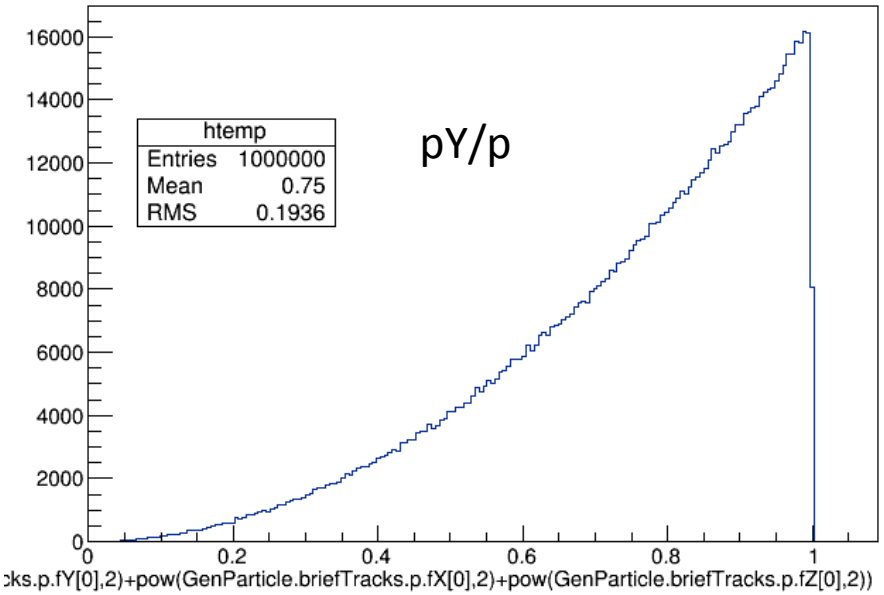


M.C. version 2 (Generation Info.)



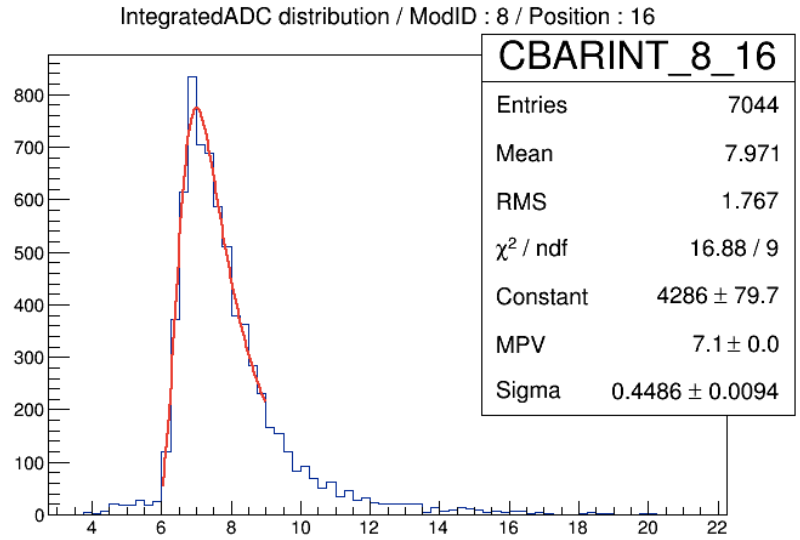


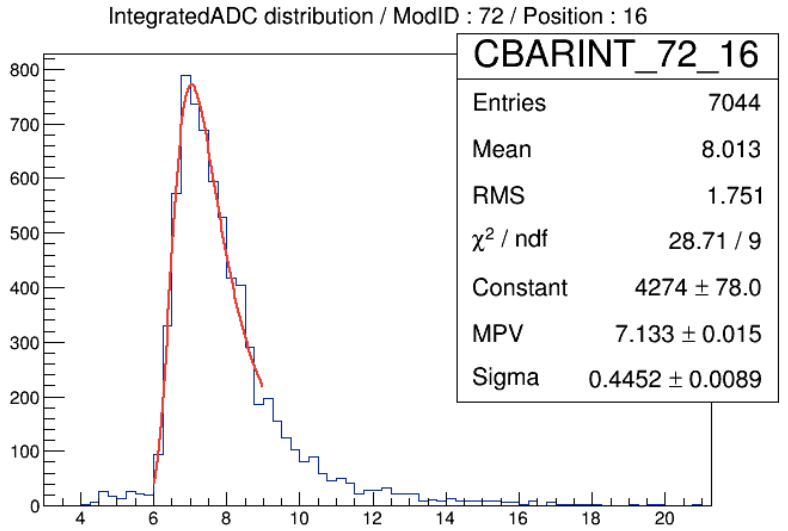




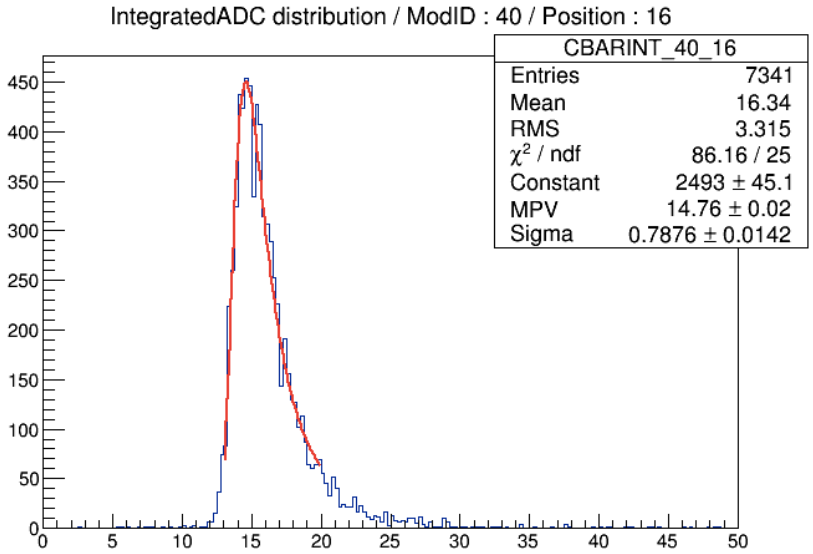
MIP Peak (Center) from Ver2

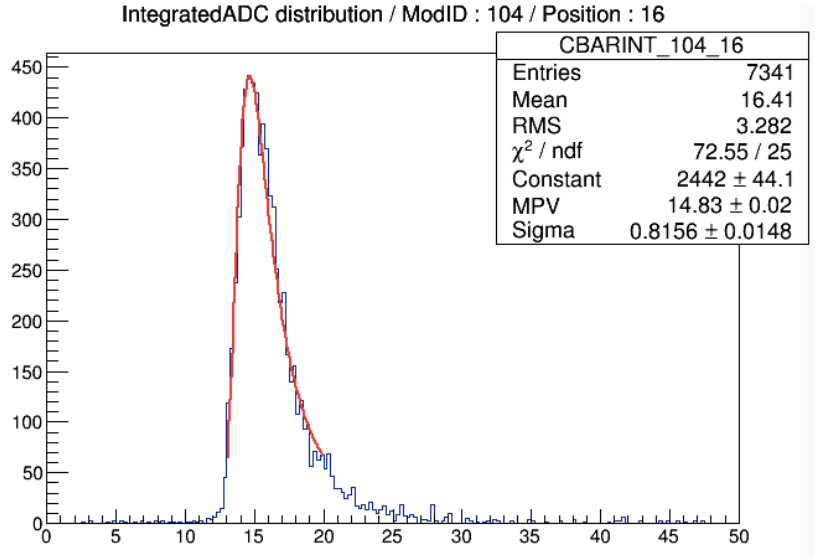
0.95





0.99





True energy deposit