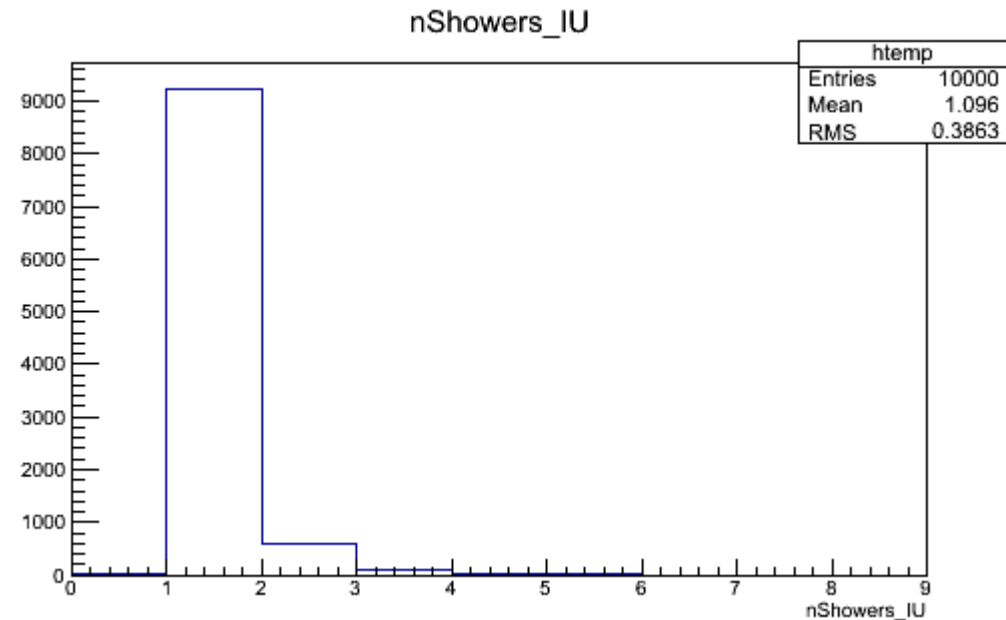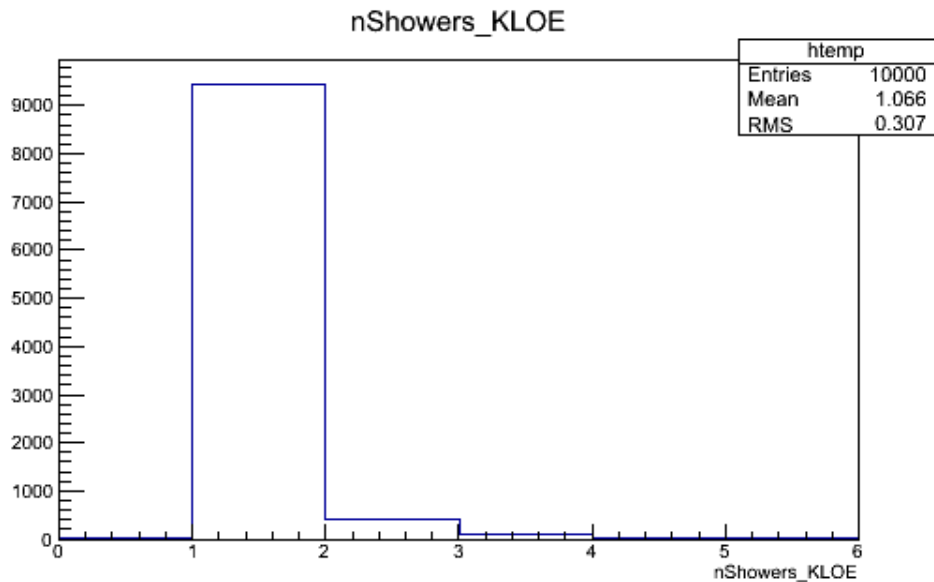# Code Updates

- David's "new" smearing algorithm now default
- IU algorithm now default in reconstruction

20 deg, 1 GeV photons
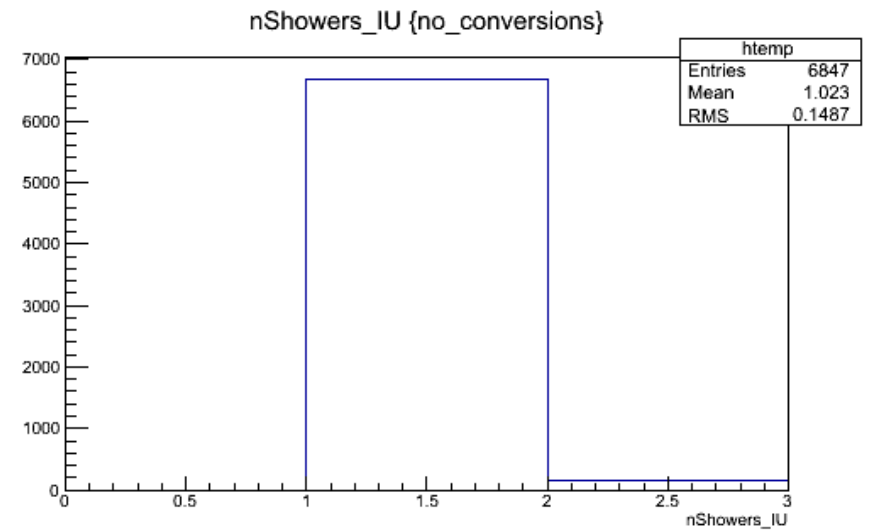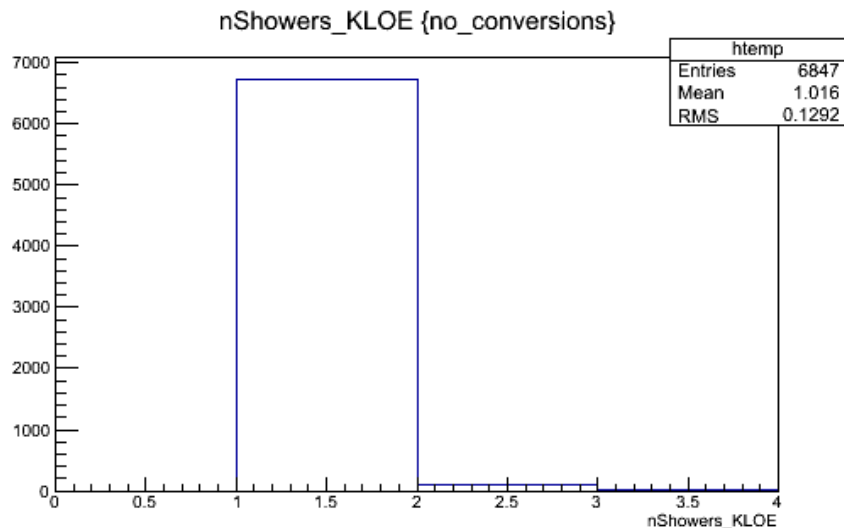
- 10,000 photons
- Number of showers

KLOE: 1.07 showers/photon
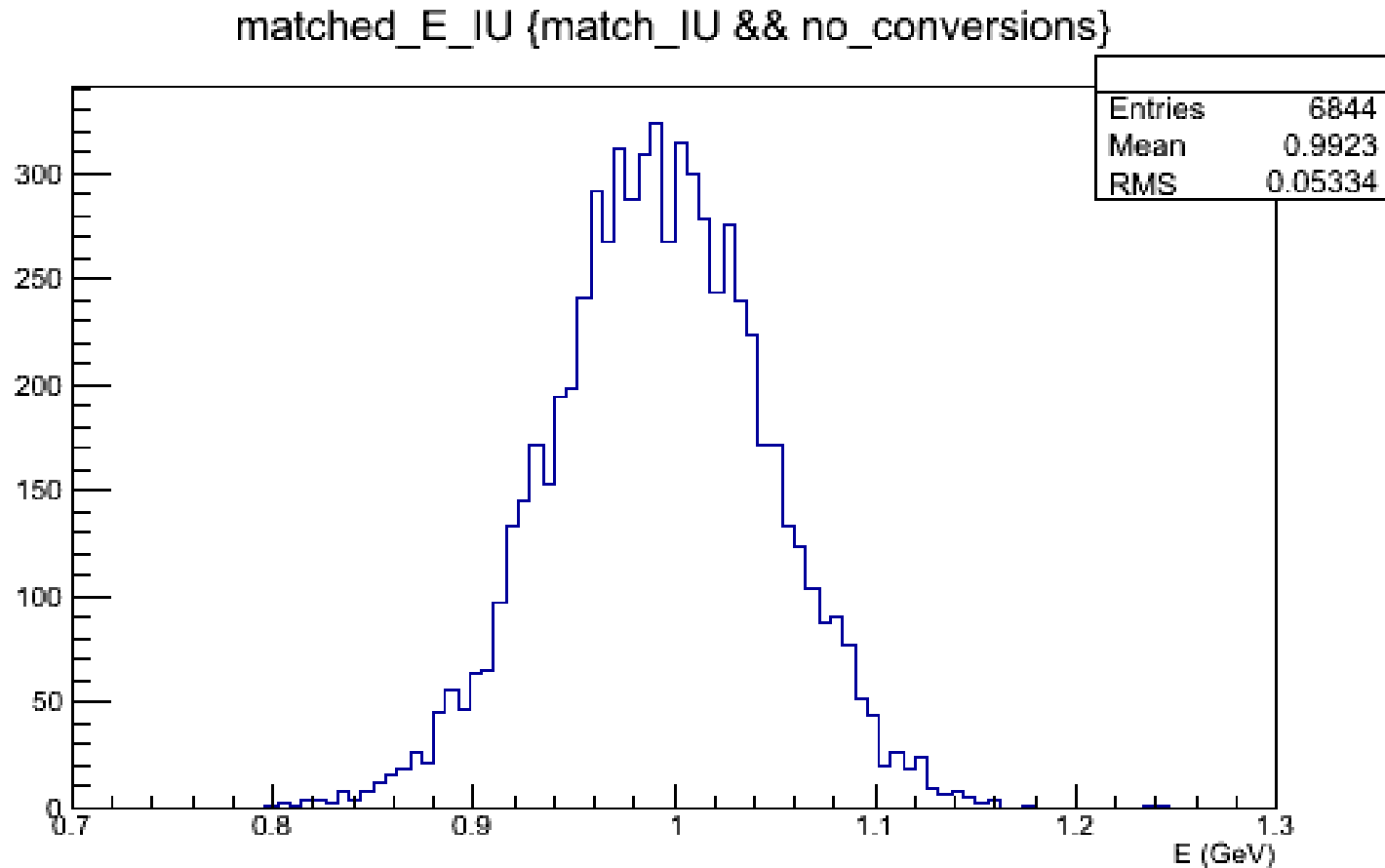
IU: 1.10 showers/photon

20 deg, 1 GeV photons

- What if we exclude events where photon converts to e+e- before reaching BCAL?

- Only 68% (or 72%) make it to BCAL intact

  – What does this really mean? Is it correct?

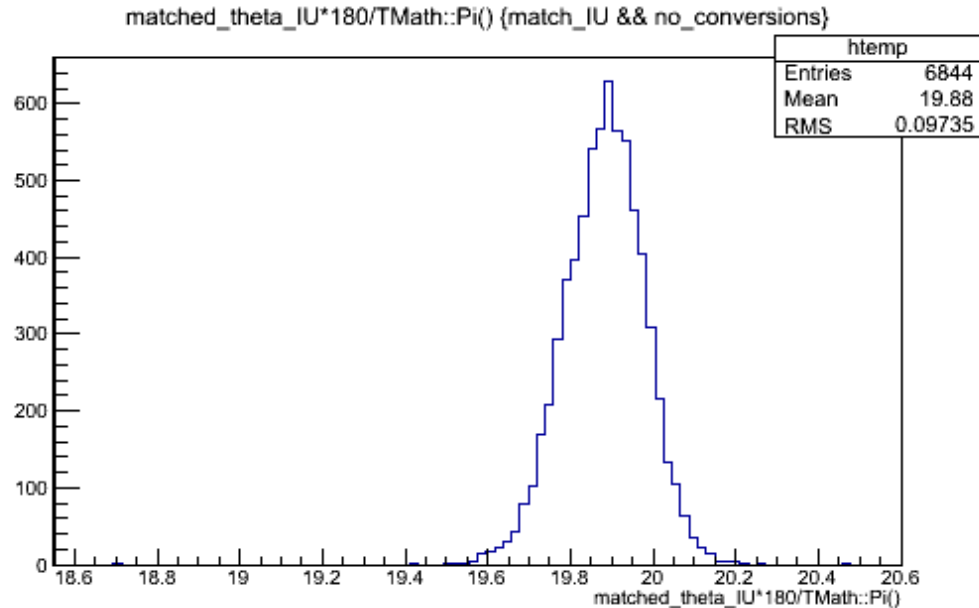KLOE: 1.01 showers/photon   IU: 1.02 showers/photon

20 deg, 1 GeV photons: Reconstructed energy

matched_E_IU {match_IU && no_conversions}

Entries	6844
Mean	0.9923
RMS	0.05334

E (GeV)

Excluding e+e- conversions

20 deg, 1 Gev photons Reconstructed theta

matched_theta_IU*180/TMath::Pi() {match_IU && no_conversions}

htemp	
Entries	6844
Mean	19.88
RMS	0.09735

- Slightly offset from 20 degrees
  - Timewalk corrections need more work?
- Resolution too good?
  - Equivalent to ~0.9 cm z resolution
  - mcsmear issue?

Photon sample #2

- 12-90 degrees; 0.1-2.0 GeV; 50,000 photons
- Showers/event:

	IU	KLOE
All events	1.18	1.06
No conversion	1.15	1.05

Why does IU reconstruct more showers than KLOE?

- KLOE first clusters showers using only r/theta information

  - Then splits up using timing/z information

- IU considers all information simultaneously

What to do next?

- Look in detail at events where we reconstruct >1 shower

- Recovering converted photons?

- Test reconstruction in fine (theta, E) grid

- Pi0 sample