PHOS in quiet beam run pp at 13 TeV

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PHOS conditions

- Readout configuration:
  - 12 SRU (out of 14) were configured for readout. M2-2 and M2-3 were not stable and masked out.
- CTP trigger rate in PHYSICS_1 was > 1 kHz, PHOS could not participate.
- PHOS was included to PHYSICS_2 together with ZDC.
- One run 223326 was marked as good, it was reconstructed (1.4M events triggered by AD-or and AD-and)
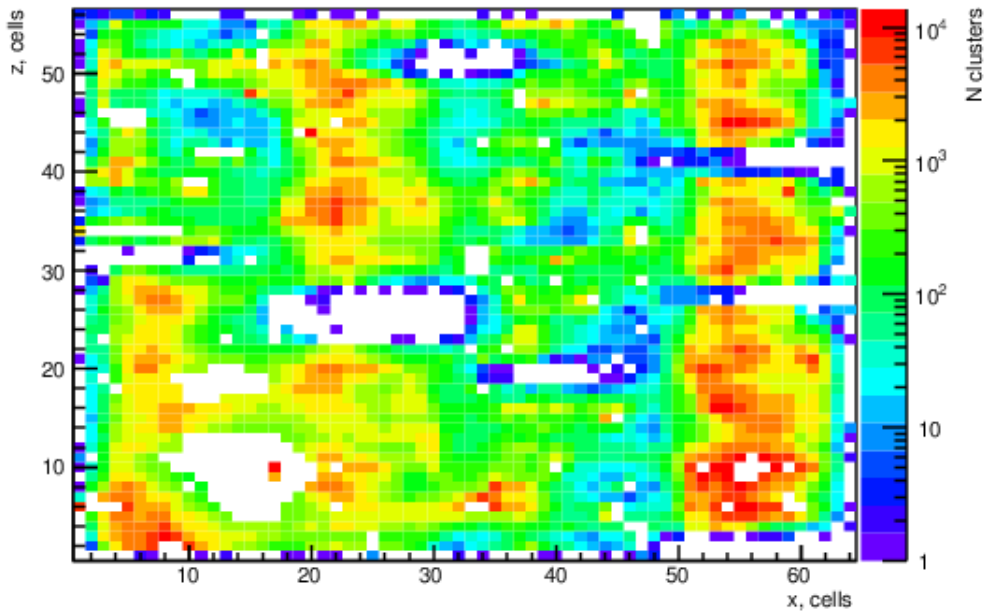- Reconstruction ran without bad channel map

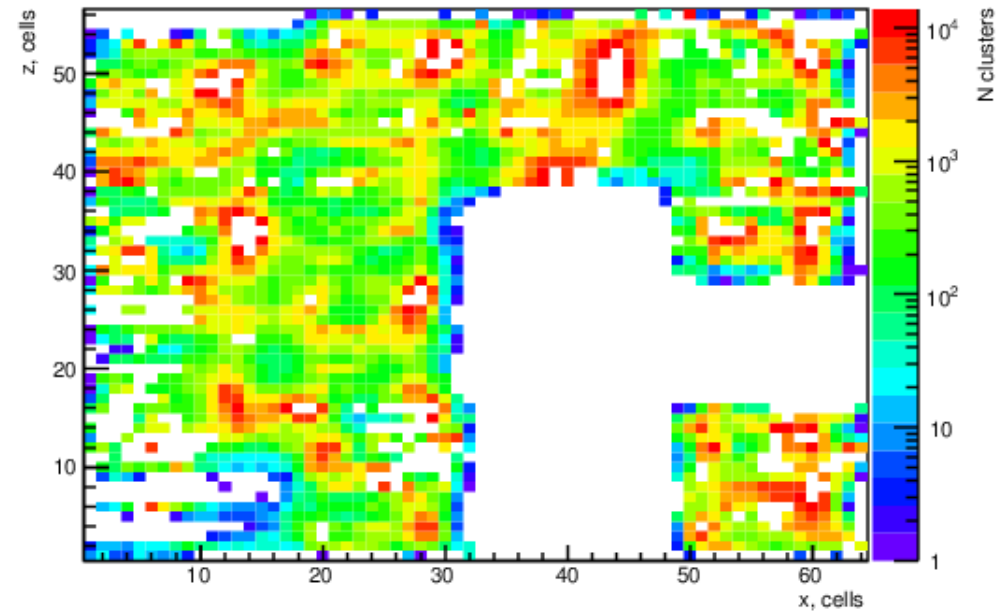# Cluster multiplicity

Cluster occupancy (E>0.5 GeV) in M1

Cluster occupancy (E>0.5 GeV) in M2

Hot spots are due to noisy and overcalibrated channels
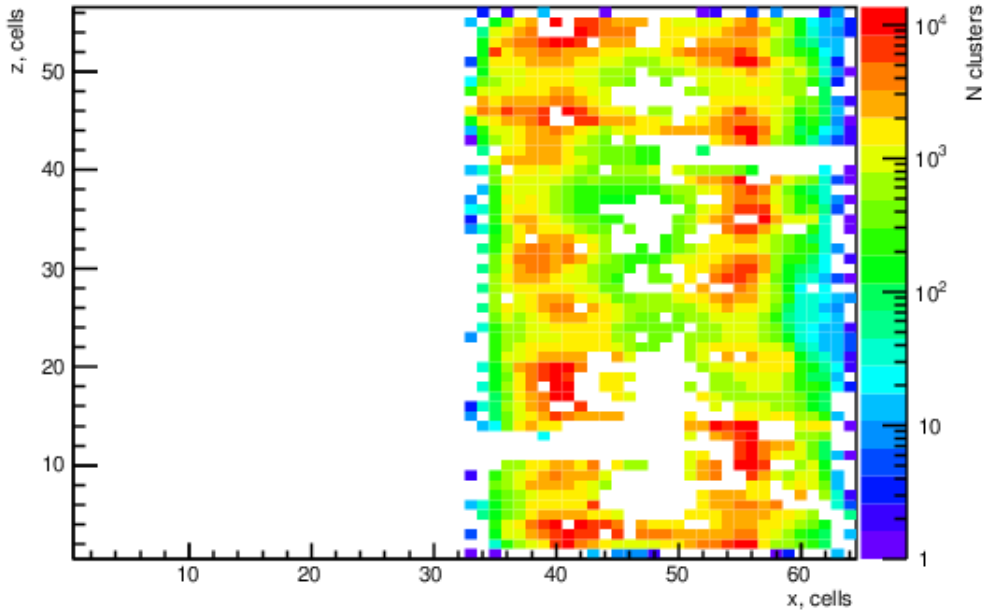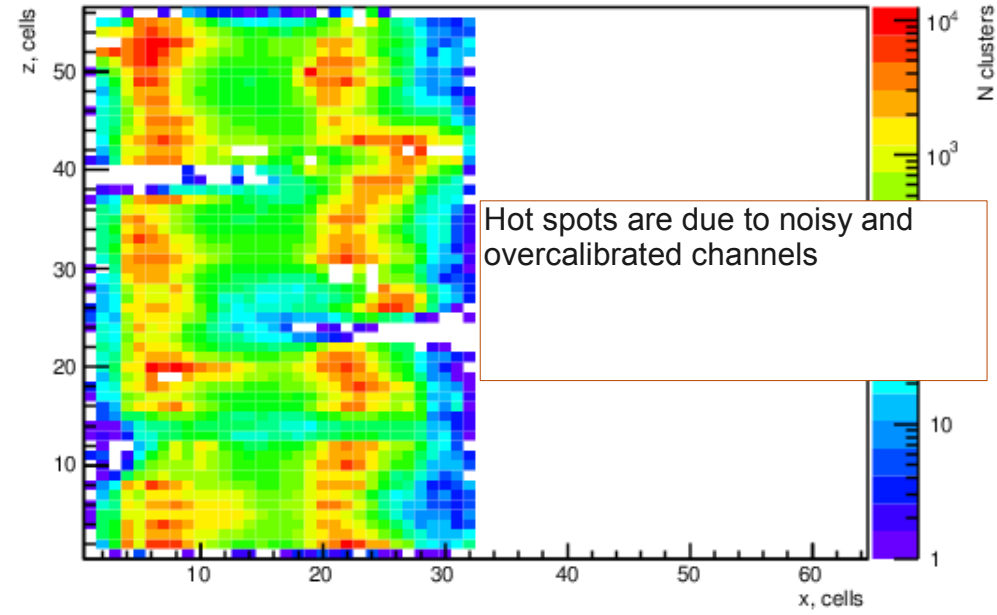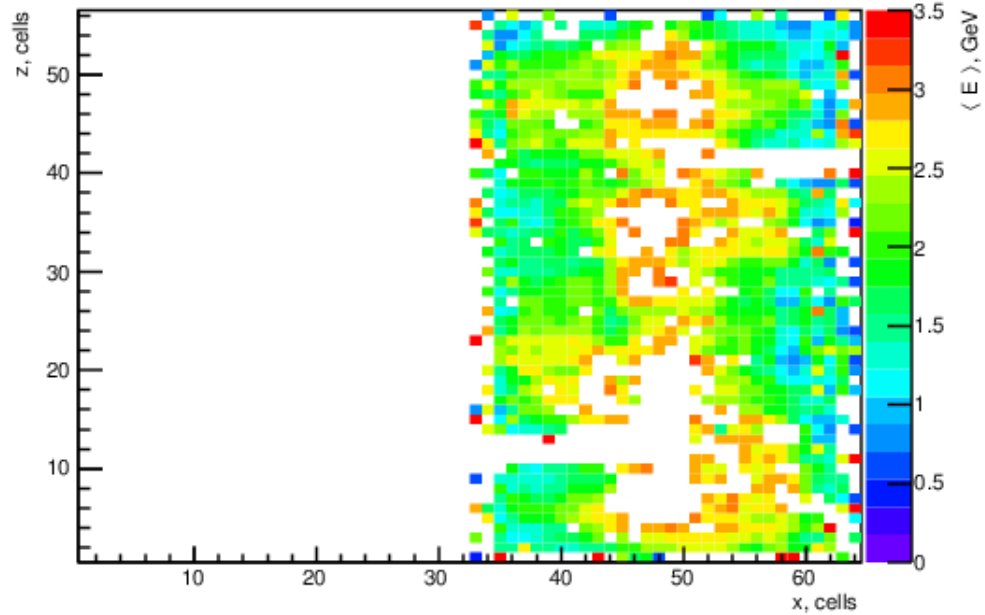
Cluster occupancy (E>0.5 GeV) in M3

Cluster occupancy (E>0.5 GeV) in M4

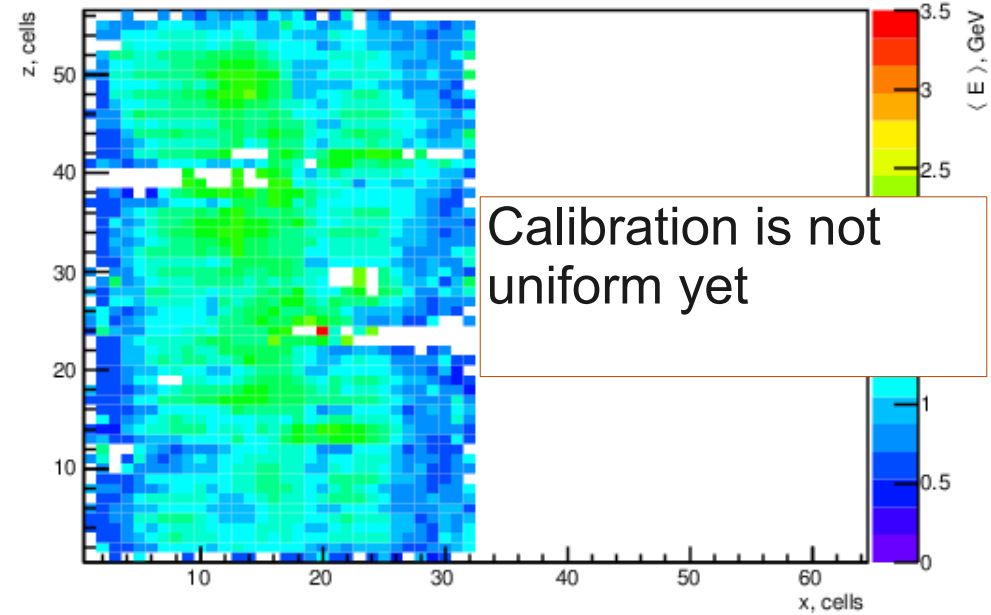# Mean cluster energy

Cluster mean energy (E>0.5 GeV) in M1

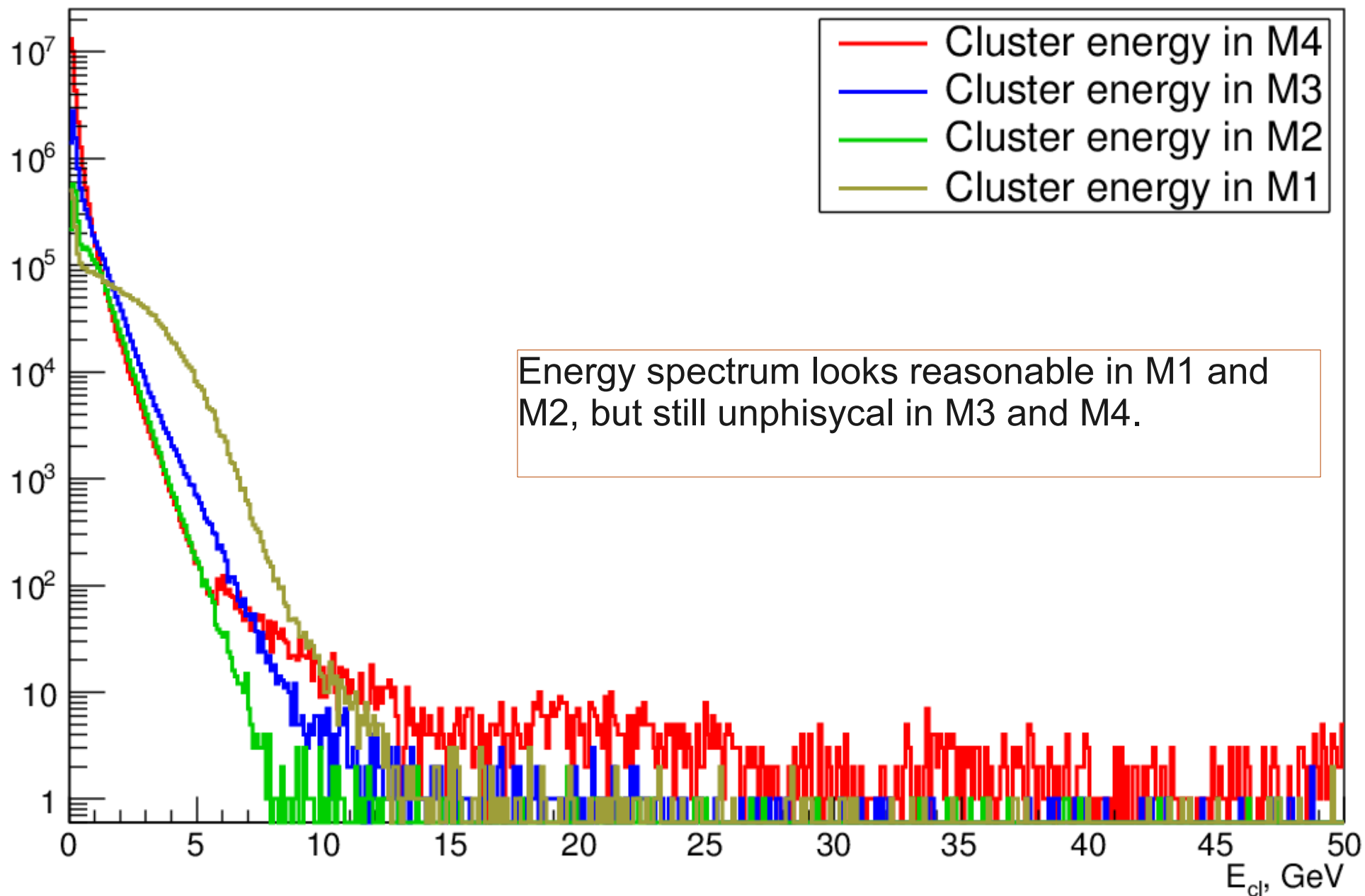Cluster mean energy (E>0.5 GeV) in M2

Calibration is not uniform yet

Cluster mean energy (E>0.5 GeV) in M3
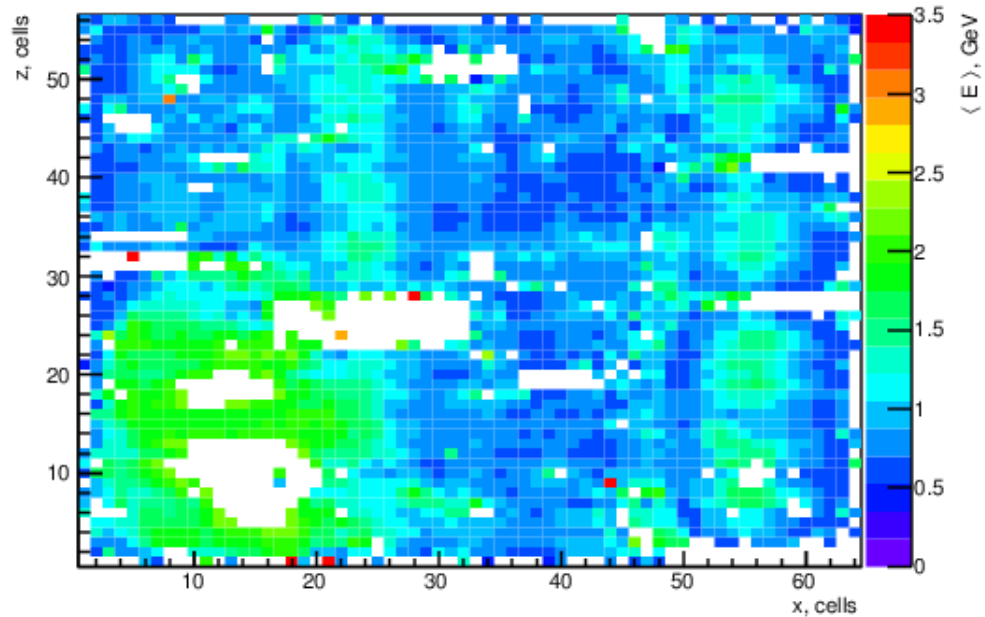
Cluster mean energy (E>0.5 GeV) in M4

Cluster energy spectrum

Energy spectrum looks reasonable in M1 and M2, but still unphisycal in M3 and M4.
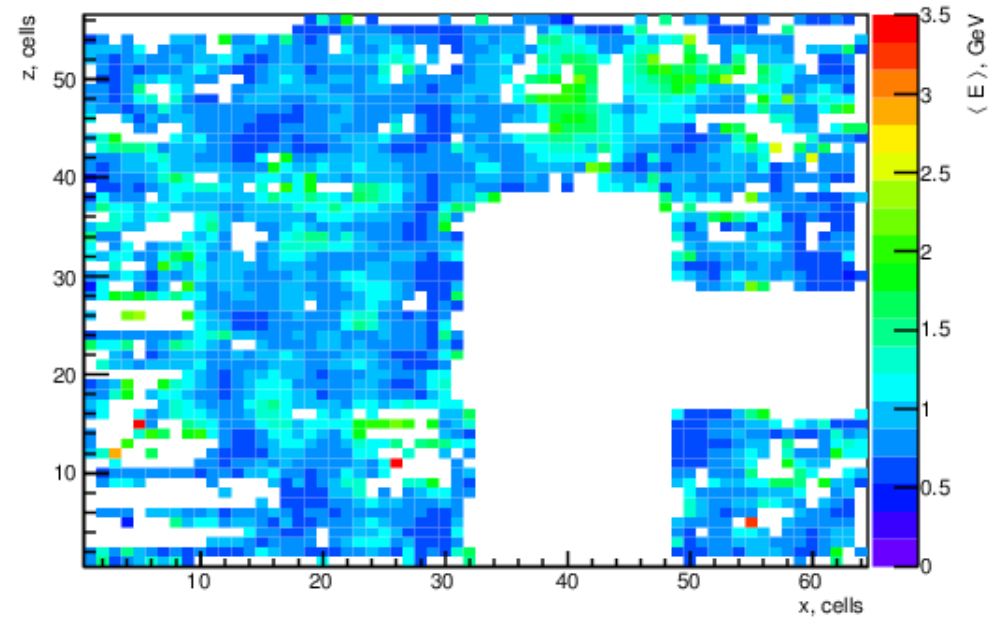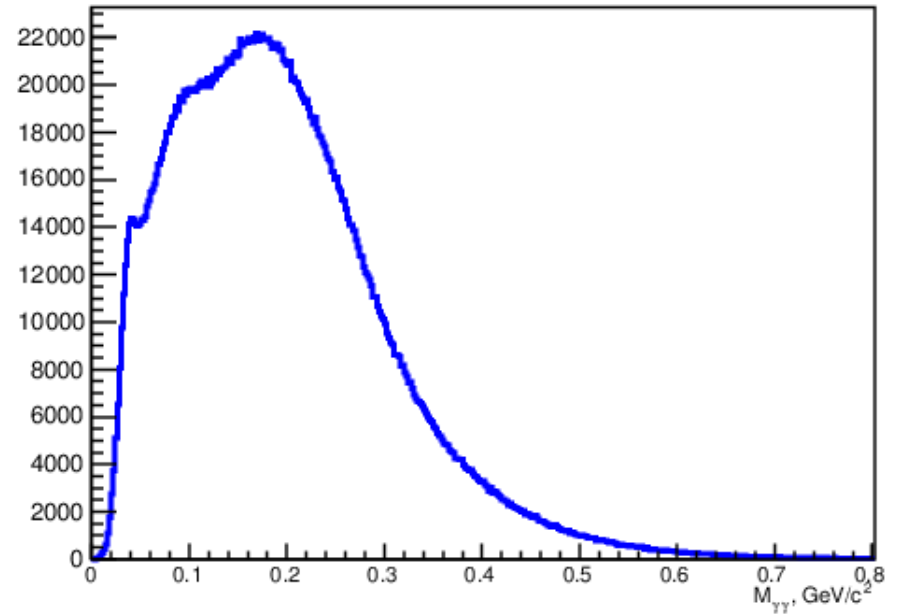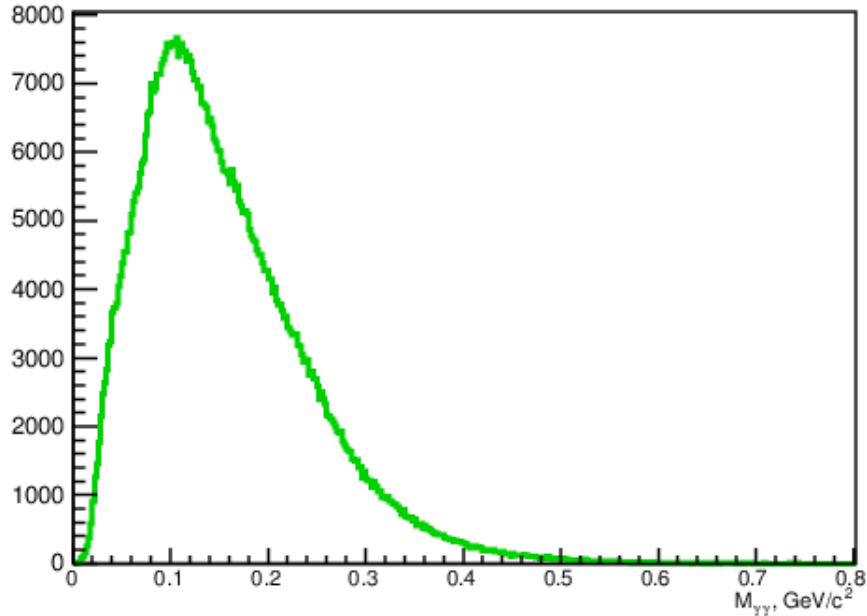
Invariant mass spectra

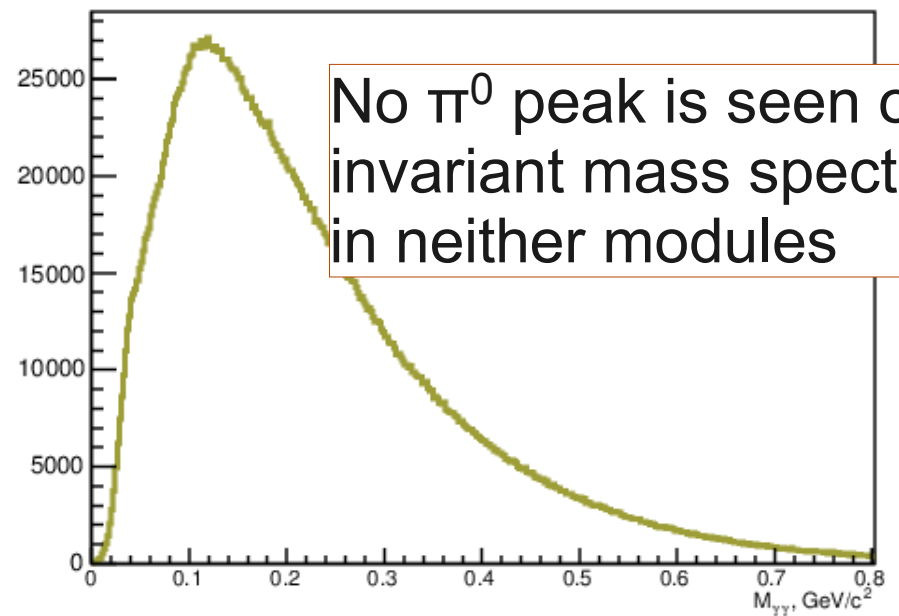### Cluster pair mass at $p_T > 2$ GeV/c in M4
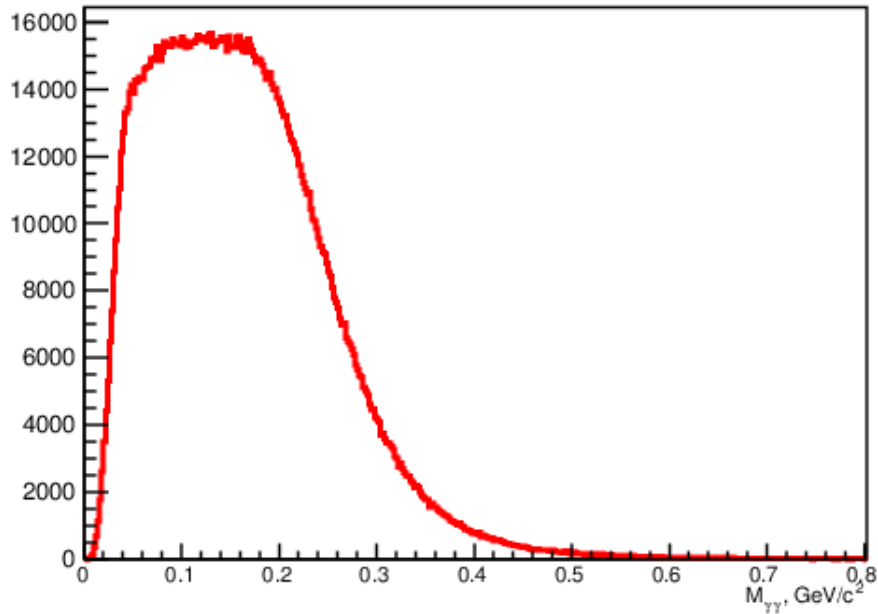
Cluster pair mass at $p_T > 2$ GeV/c in M3

Cluster pair mass at $p_T > 2$ GeV/c in M2

Cluster pair mass at $p_T > 2$ GeV/c in M1

No π^0 peak is seen on invariant mass spectra in neither modules

Results of analysis with BCM

- Cluster occupancy and mean energy maps show hot spots. The noisiest channels were suppressed, but ptobably not all yet

- Cluster energy spectrum: looks better in M1 and 2, but still unphisycal in M3 and M4. Further clean up of noise is needed.

- No π^0 peak is seen on invariant mass spectra in neither modules.

- Further tuning of APD high voltage is needed to equalize gains, noisy still dominates over signal