

$\pi^0$  calibrations of ECALs  
for 2016 DVCS data

## Calibration procedure (reminder)

For every module of a calorimeter gamma-gamma invariant mass (where 1 gamma hits this module, while other gamma is reconstructed elsewhere) was calculated assuming  $\pi^0$  originated from the primary vertex.

1-d histograms with  $\pi^0$  mass shift been filled for every module (with cluster center in the current module)

Energy correction coefficient for every module had been calculated out of mean of  $\pi^0$  mass fitted by Gaussian + 1-st order polynomial.

Energy correction coefficients (1 per module) had been used in the next iteration.

Procedure had been repeated few times.

# Data used for calibration

2 runs of pi- beam data

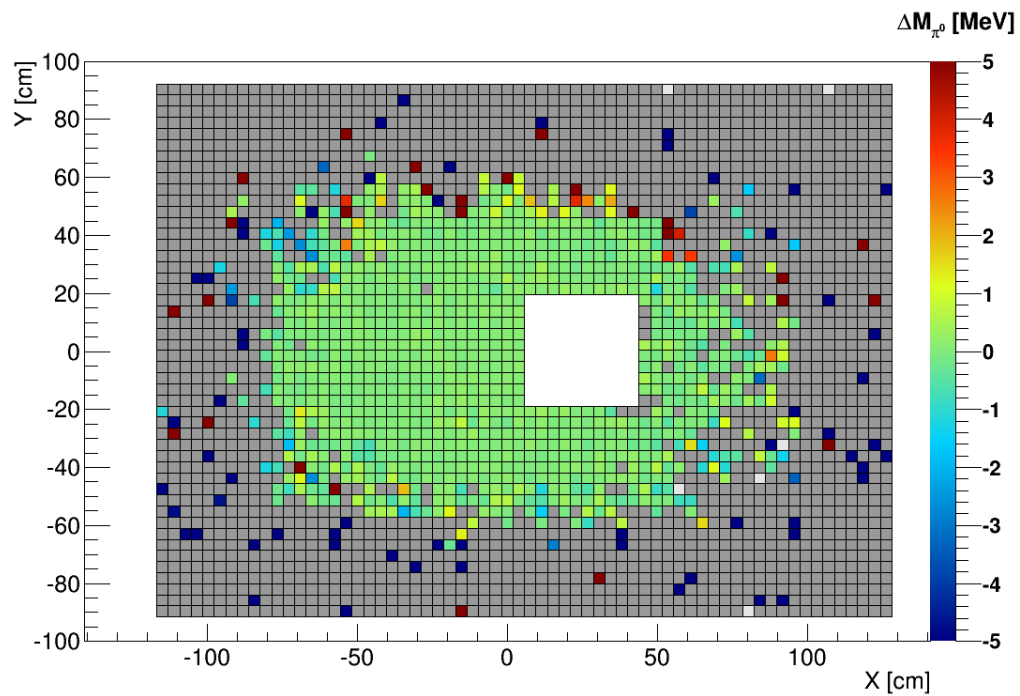
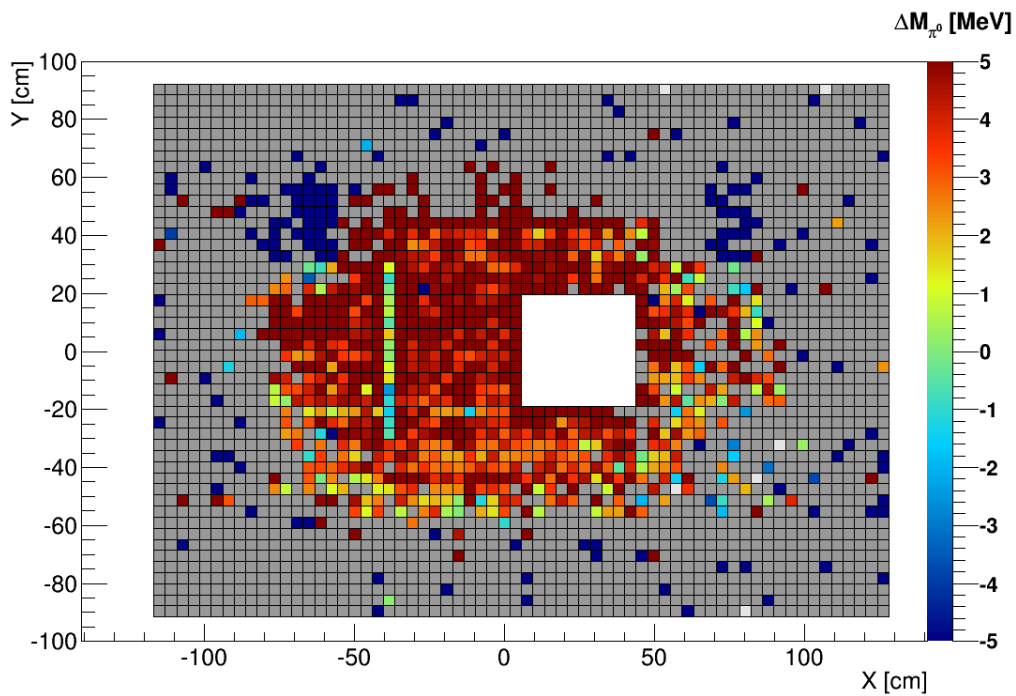
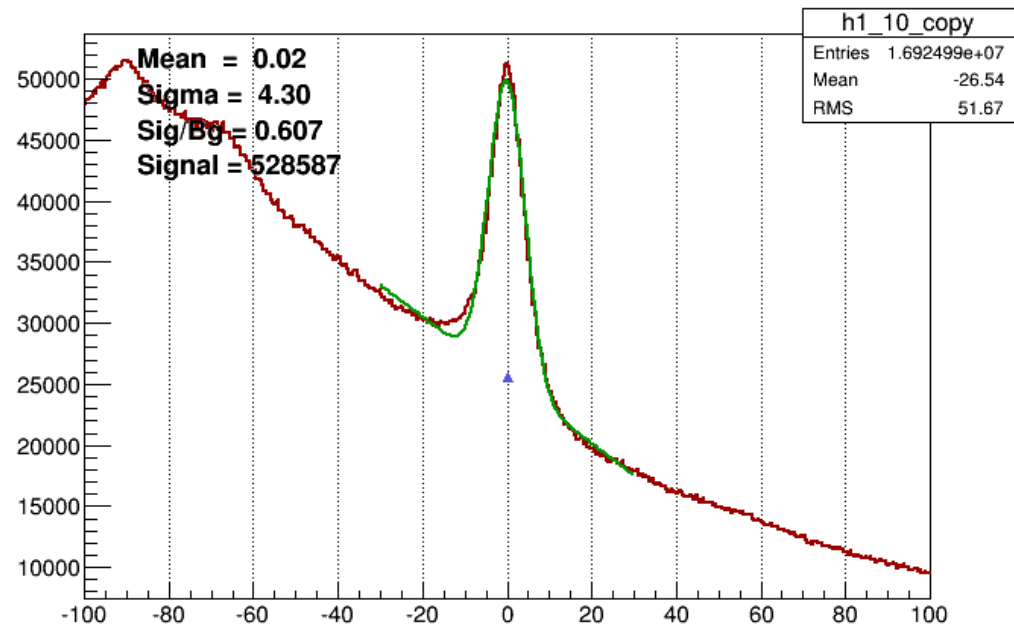
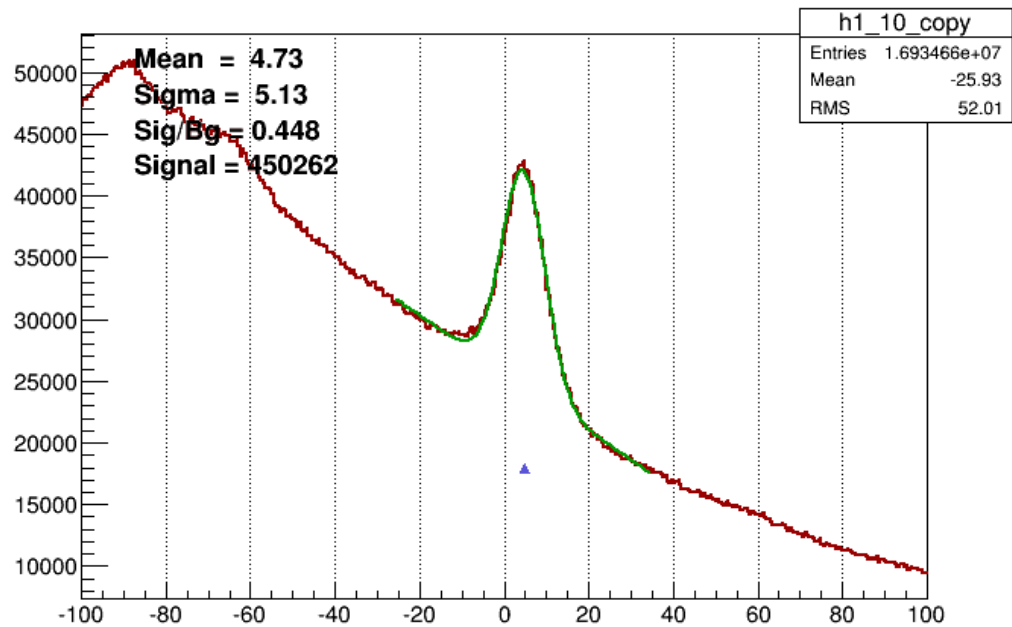
`/eos/experiment/compass/generalprod/testcoral/pi2016P06t2/`

Currently 8 runs are available (all pi- beam data of 2016) →  
Calibrations has to be repeated.

Iteration # 0

ECAL2

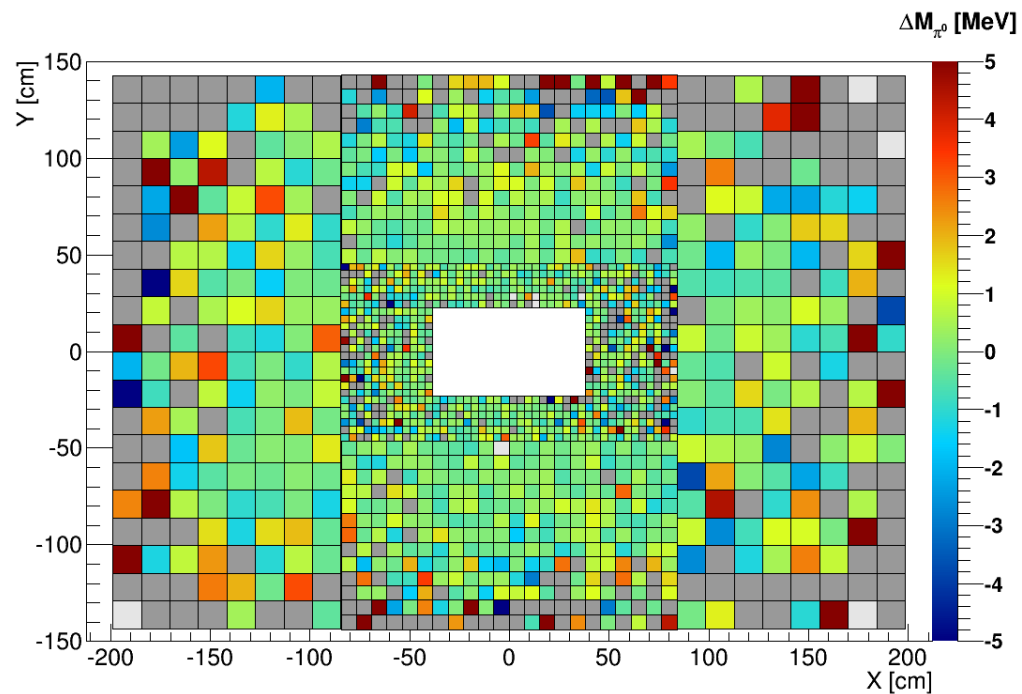
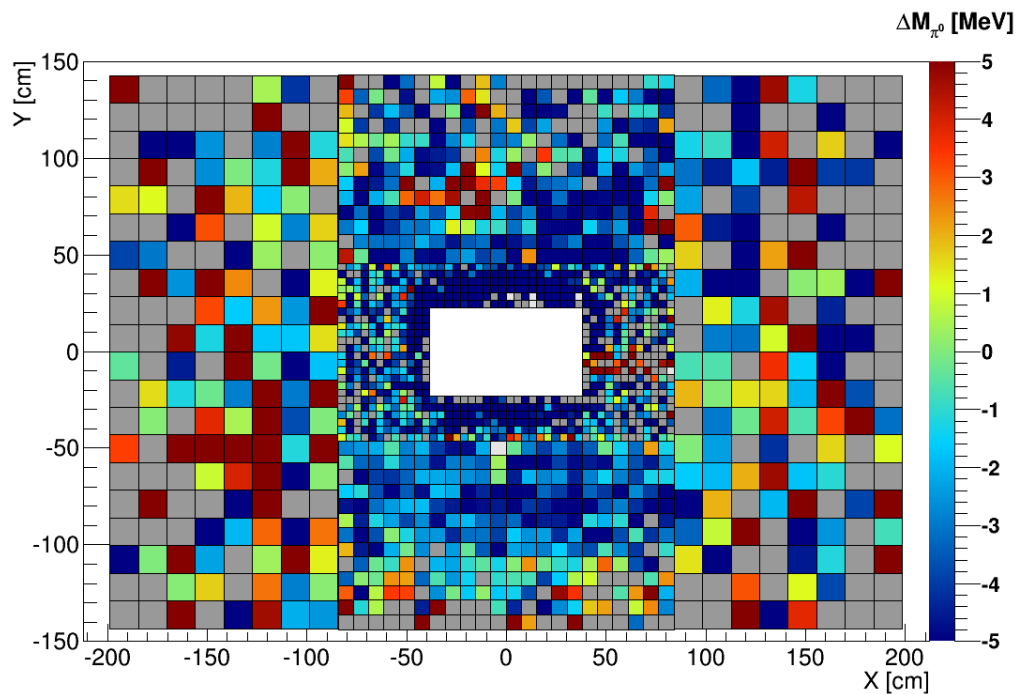
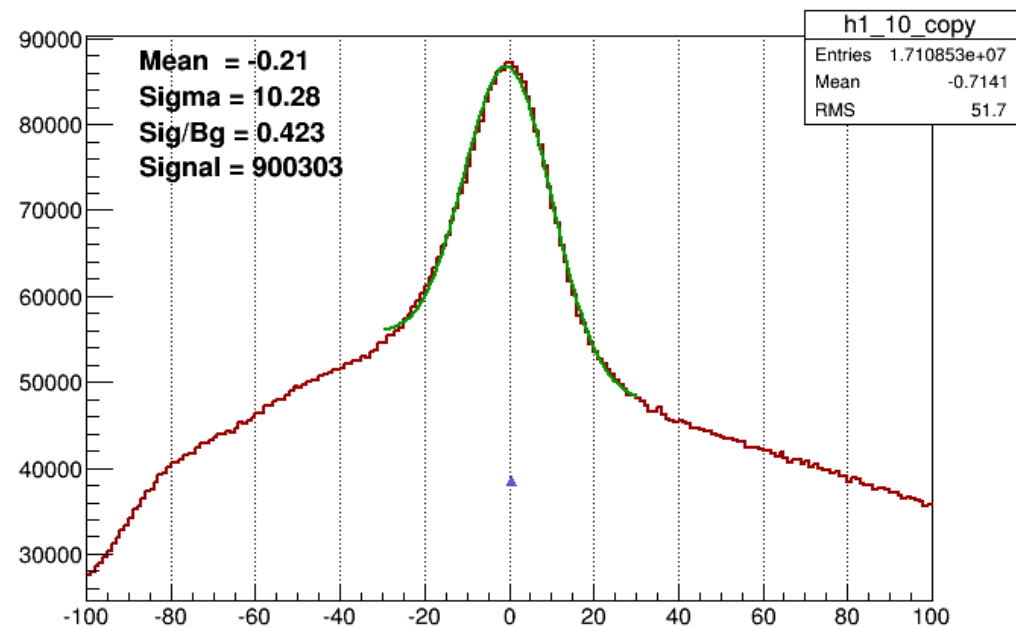
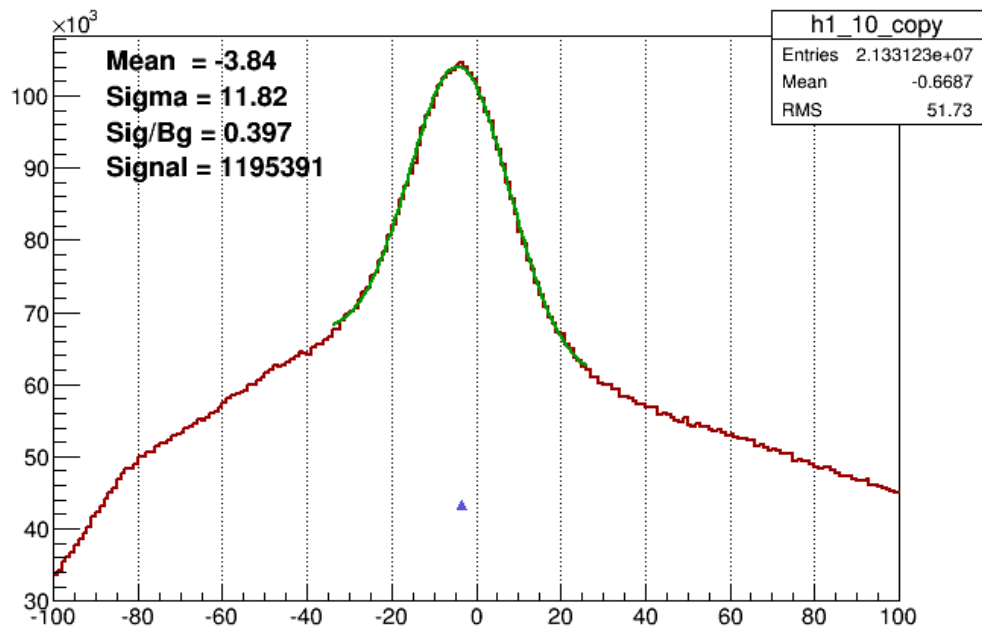
Iteration # 8



Iteration # 0

ECAL1

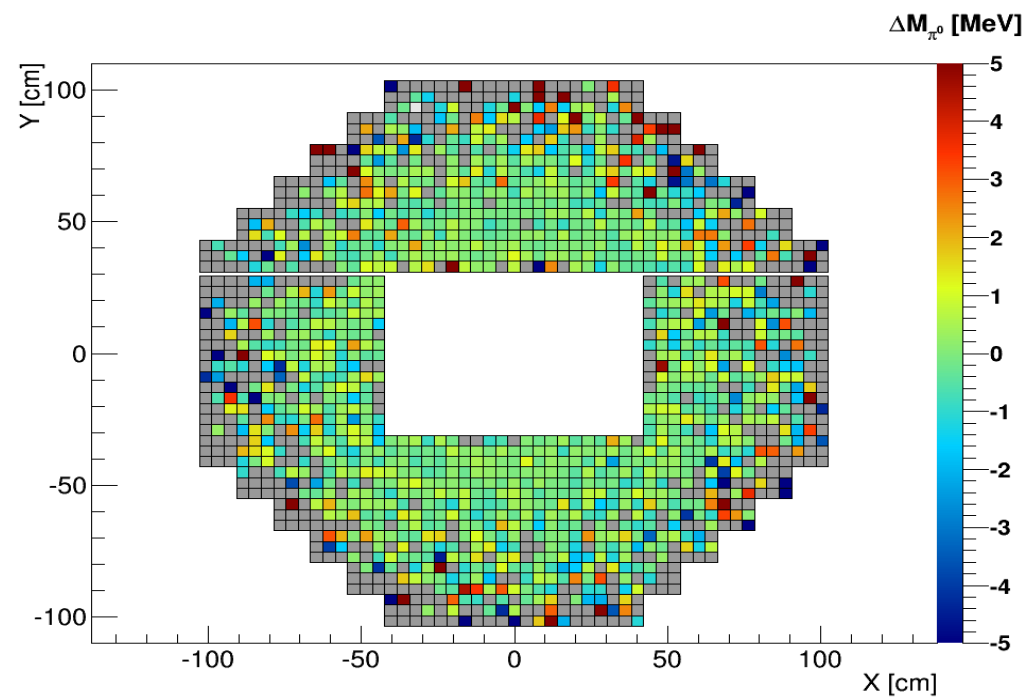
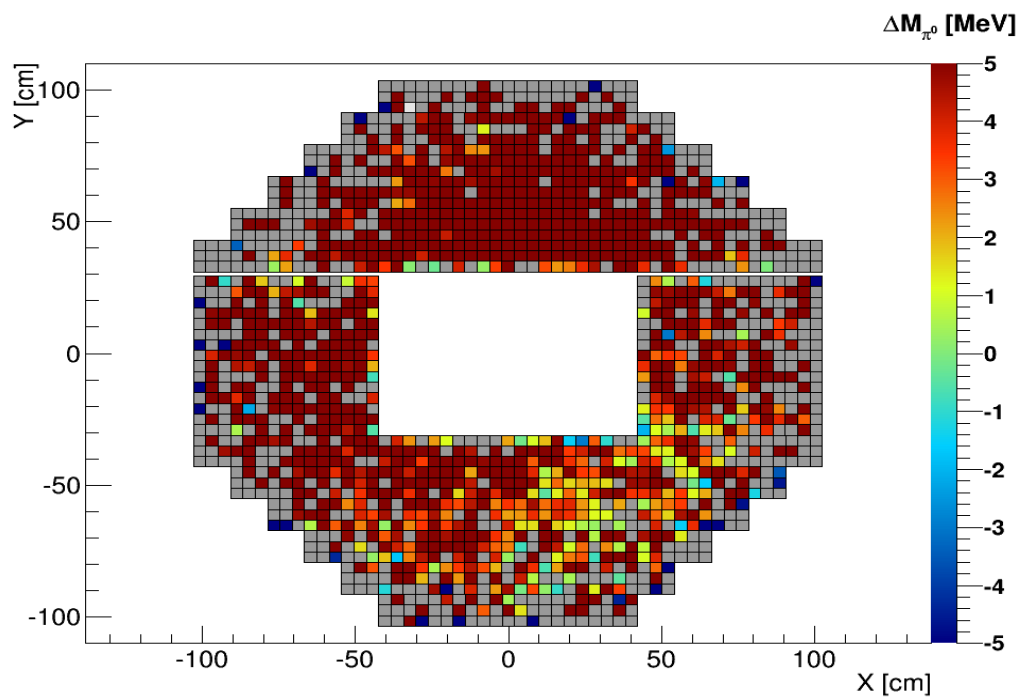
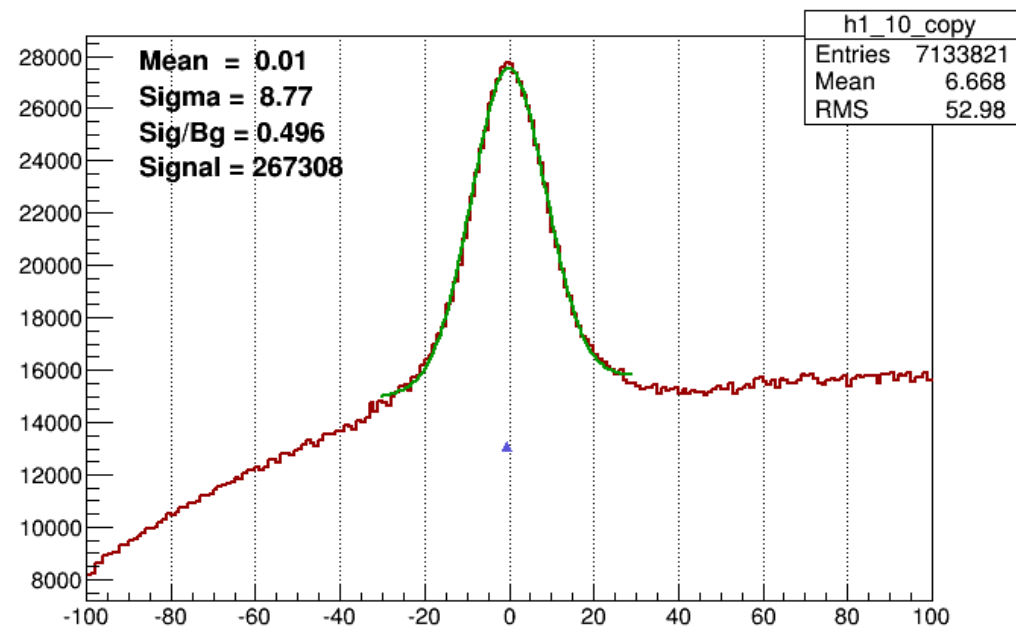
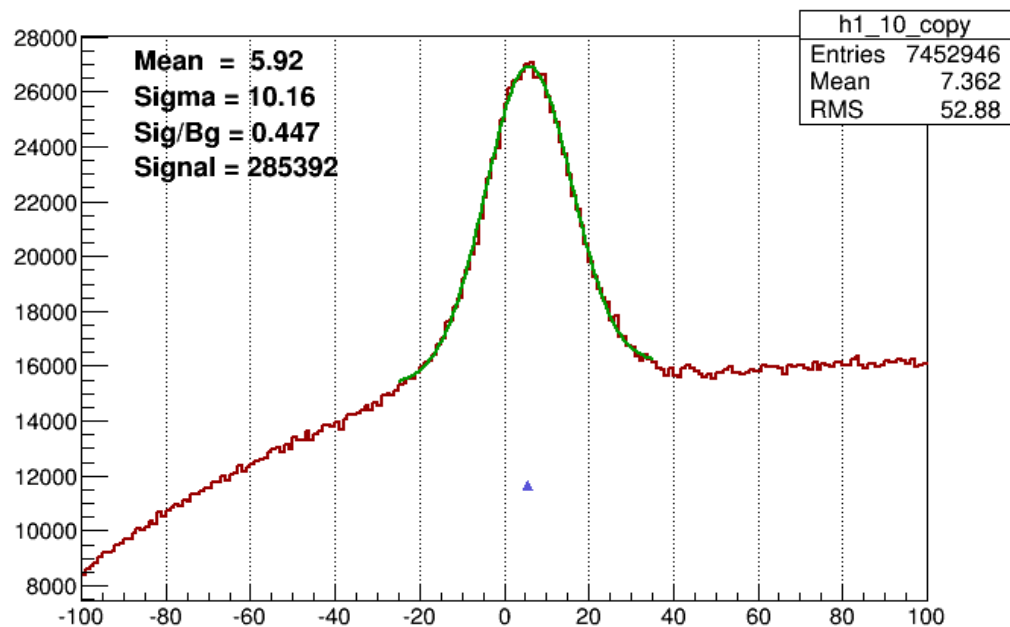
Iteration # 9



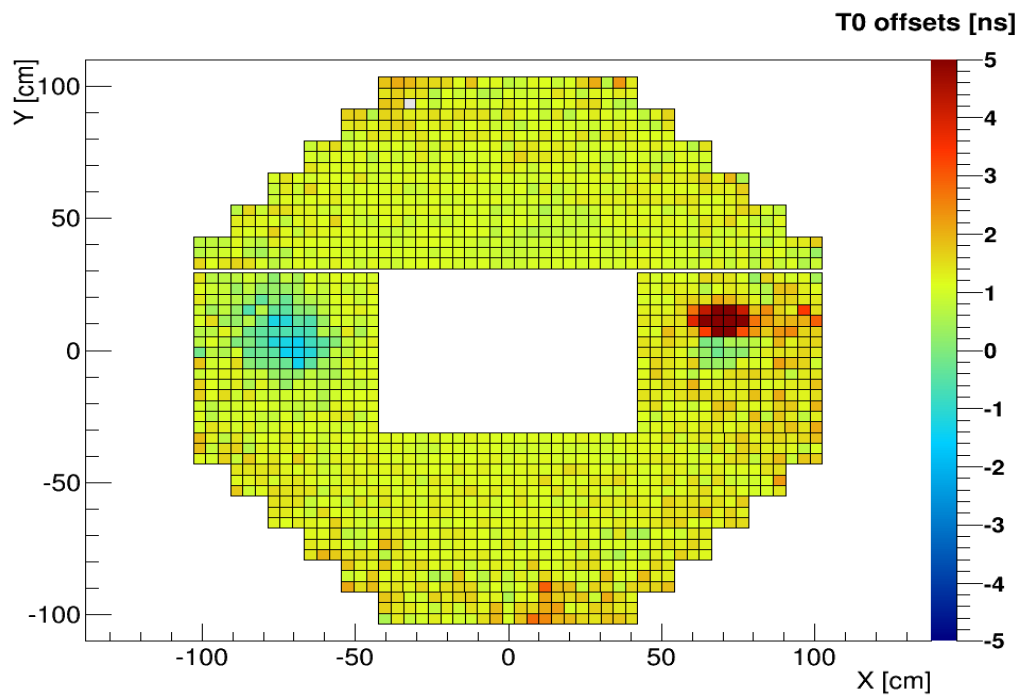
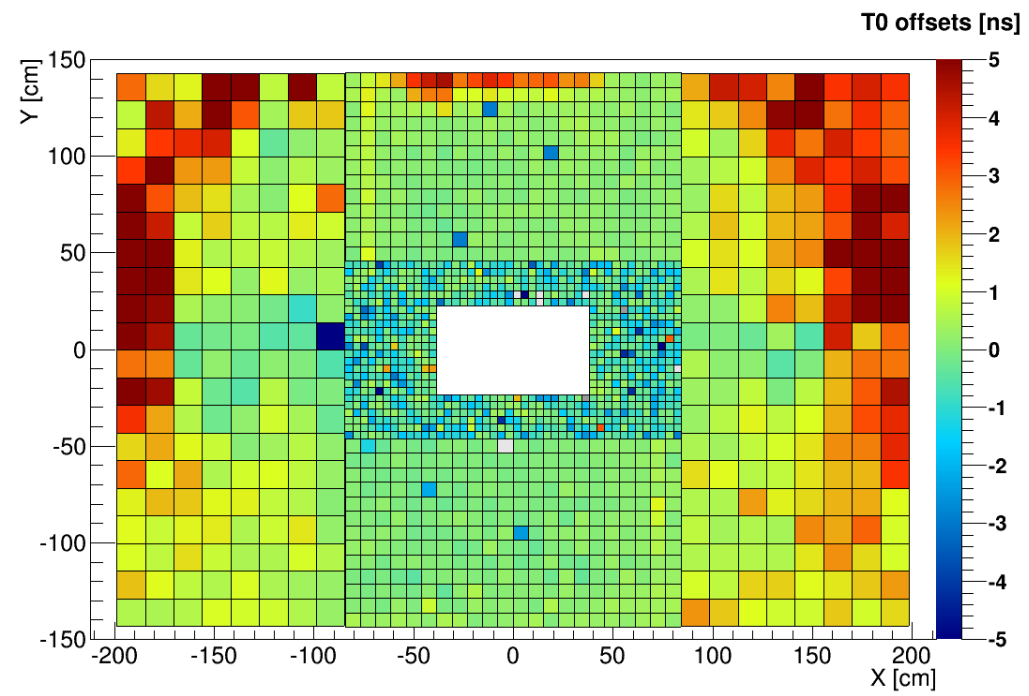
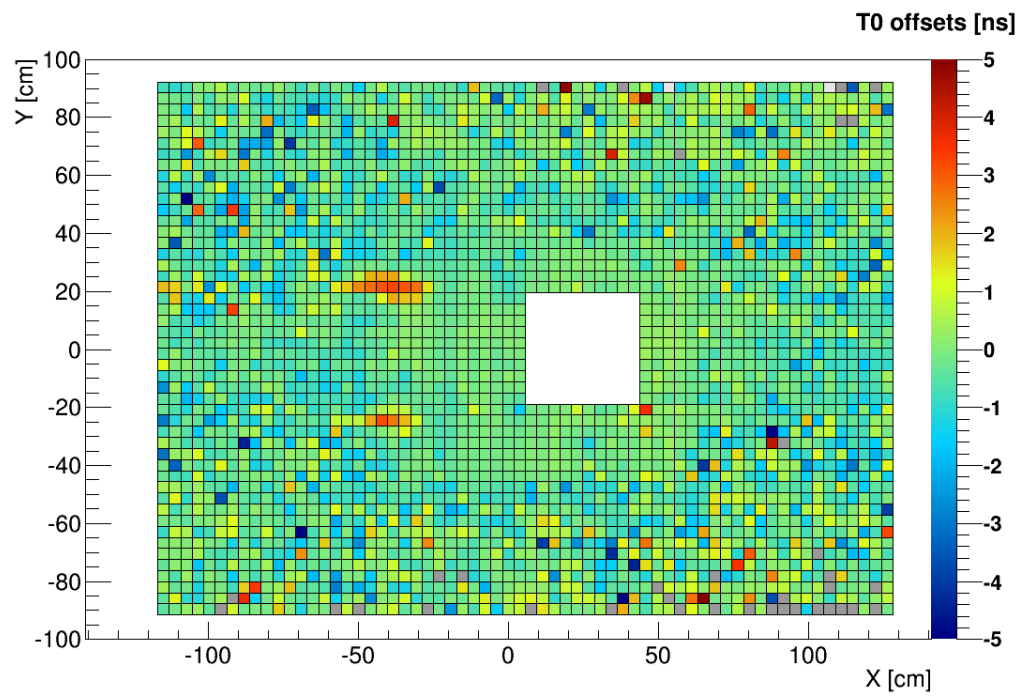
Iteration # 0

ECAL0

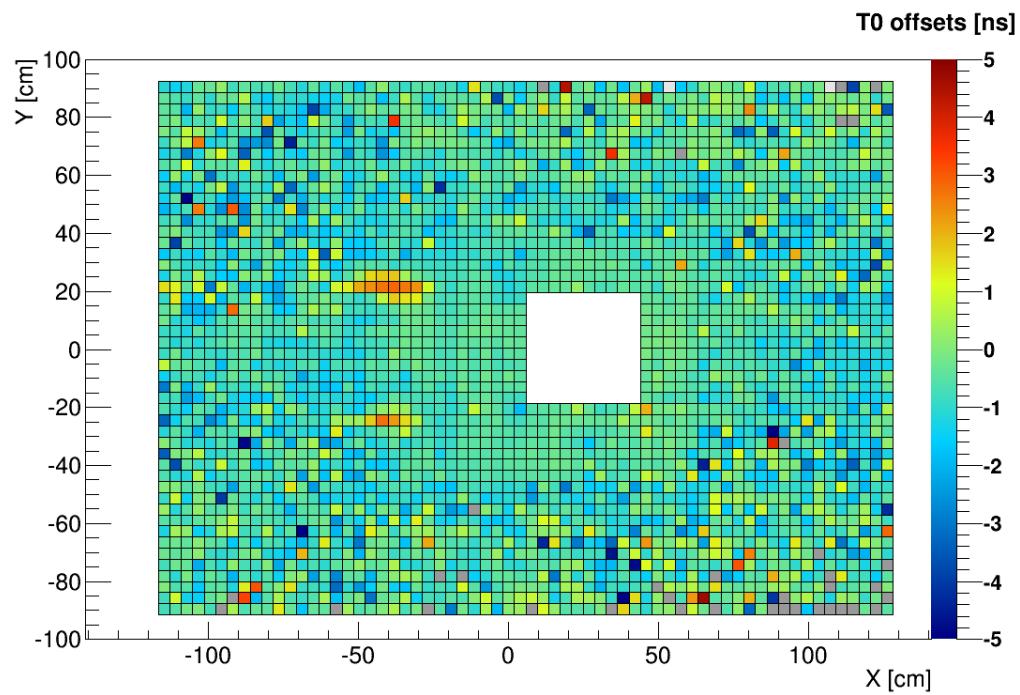
Iteration # 9



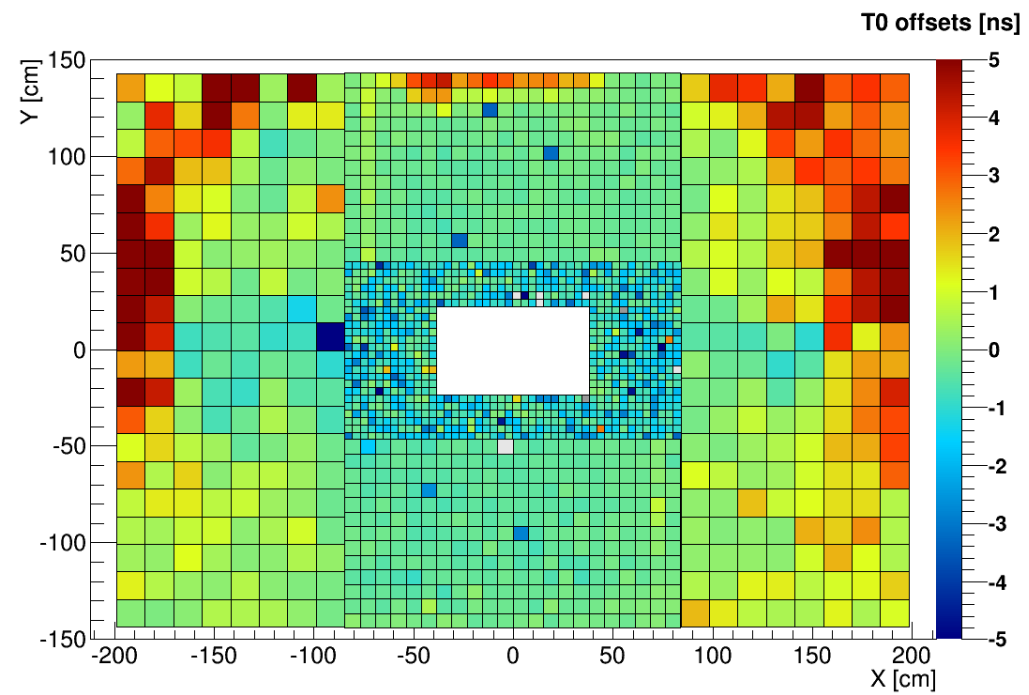
# T0 offsets



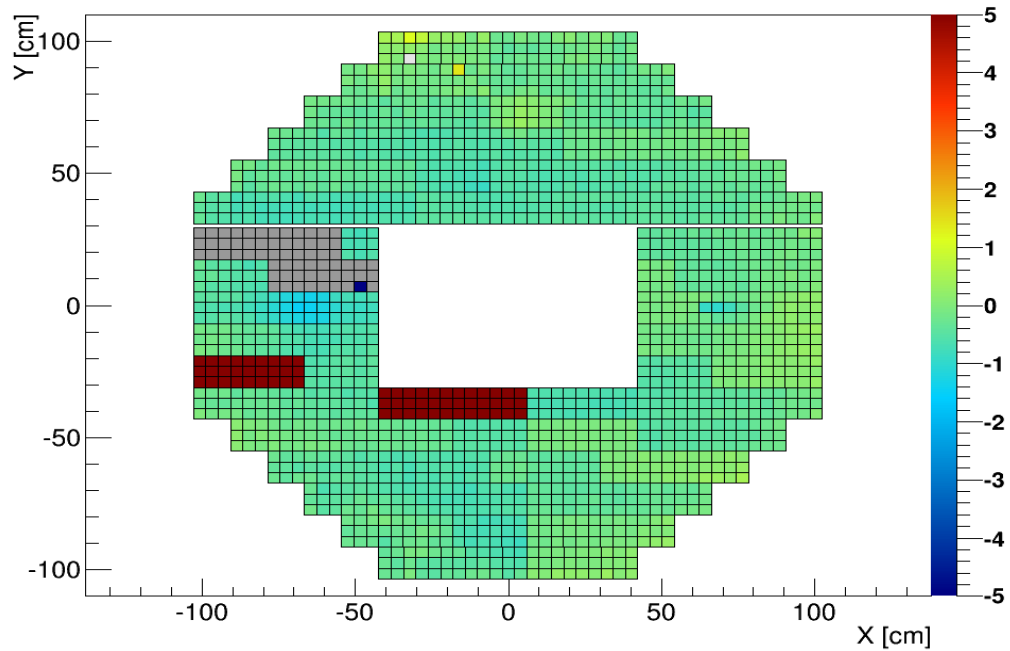
# T0 offsets



EPIC /afs/cern.ch/work/g/giges/EPIC\_R6/dvcs2\_2016-pit1-0\_EC2\_all\_runs\_iter\_10\_testhsum.root



T0 offsets [ns]



EPIC /afs/cern.ch/work/g/giges/EPIC\_R6/dvcs4\_2016-pit1-0\_EC0\_all\_runs\_iter\_9\_testhsum.root

T0 calibration  
Status in October 2017



## Current activity

- Migration of calibration software to Htcondor batch system  
(LSF is stopped today)
  - not trivial, as iteration nature of calibration procedure assumes sending bunch of jobs on every iteration from master script running (~ one week) in the batch. It is **not** possible in Htcondor (schedulers are not running on batch nodes)
    - solution: server on local host with Htcondor scheduler installed to re-transmit job submission commands sent from batch nodes (a-la PANDA)
- Migration to CERN Centos7 OS

# Current activity

- Investigation of possibility to calibrate using muon data (ECAL1 and ECAL0 only).
  - Limited coverage of ECAL1 surface (see pic.)
  - ECAL0 – to be investigated

All runs of P08 period. After 4 iterations:

