Stability and daily calibration

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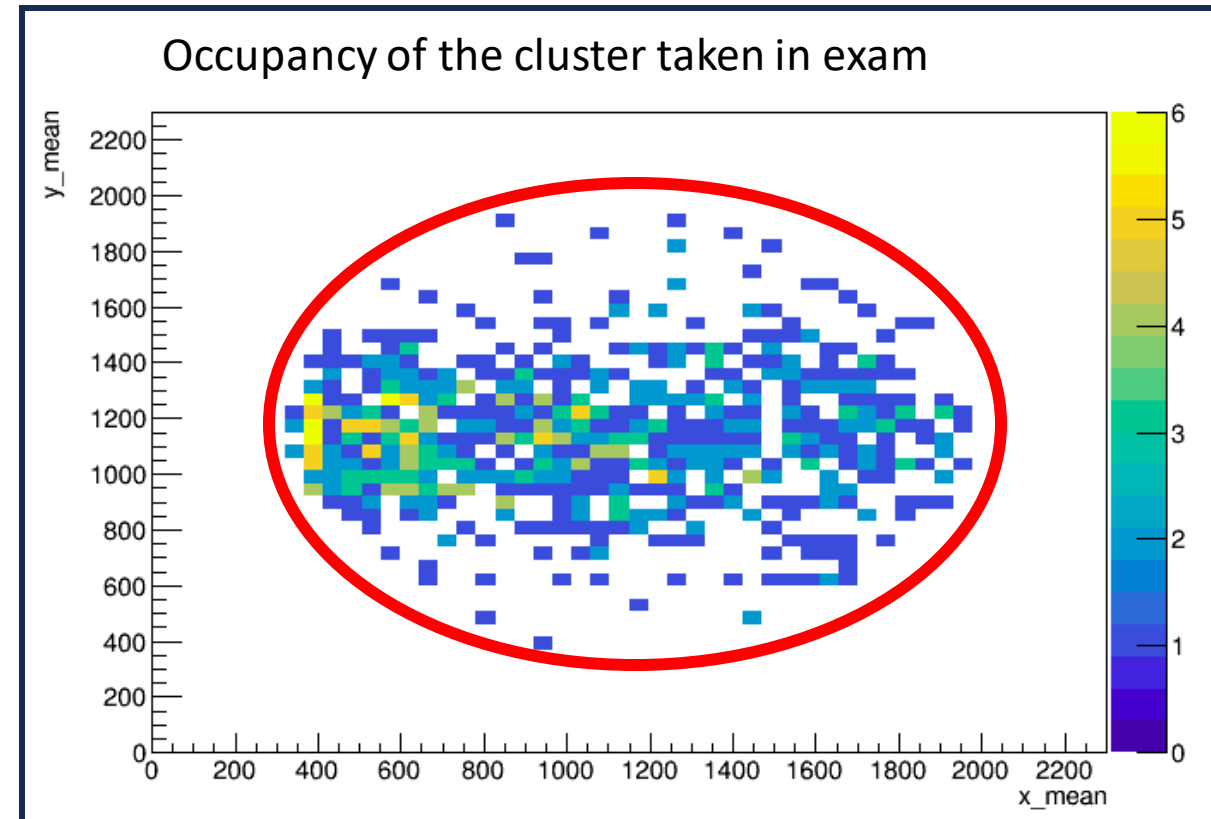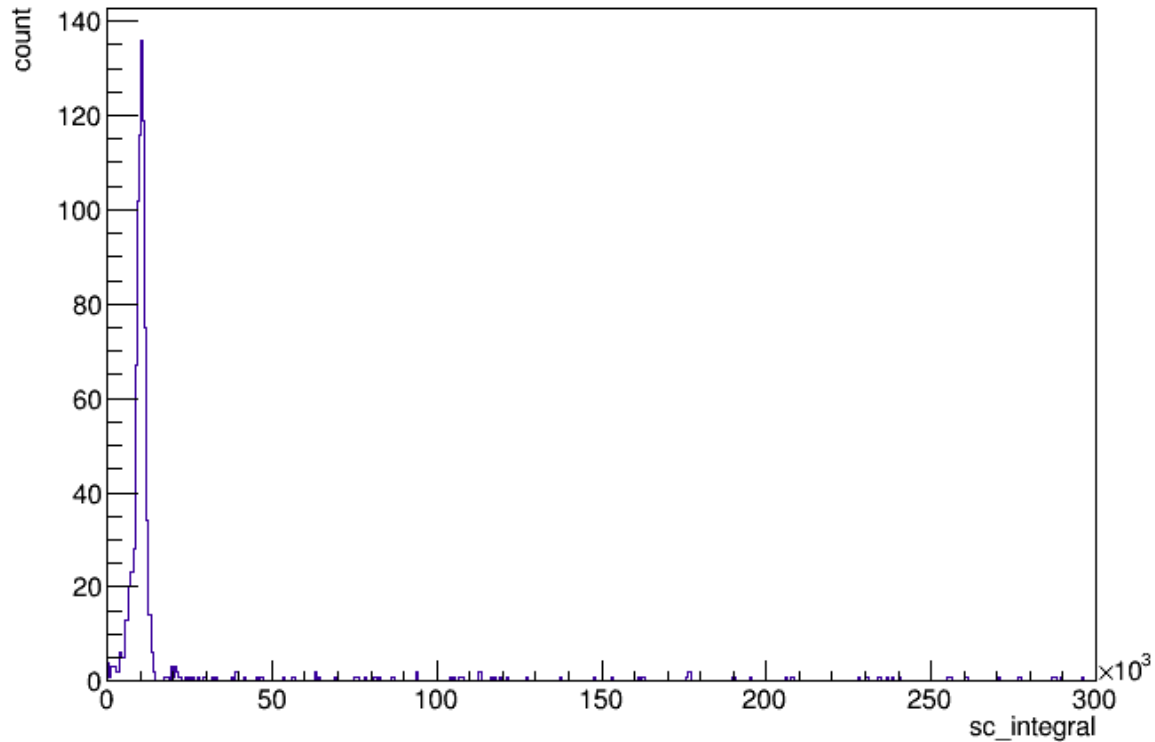
Varibles definition

Example: Run 17400

Cuts:
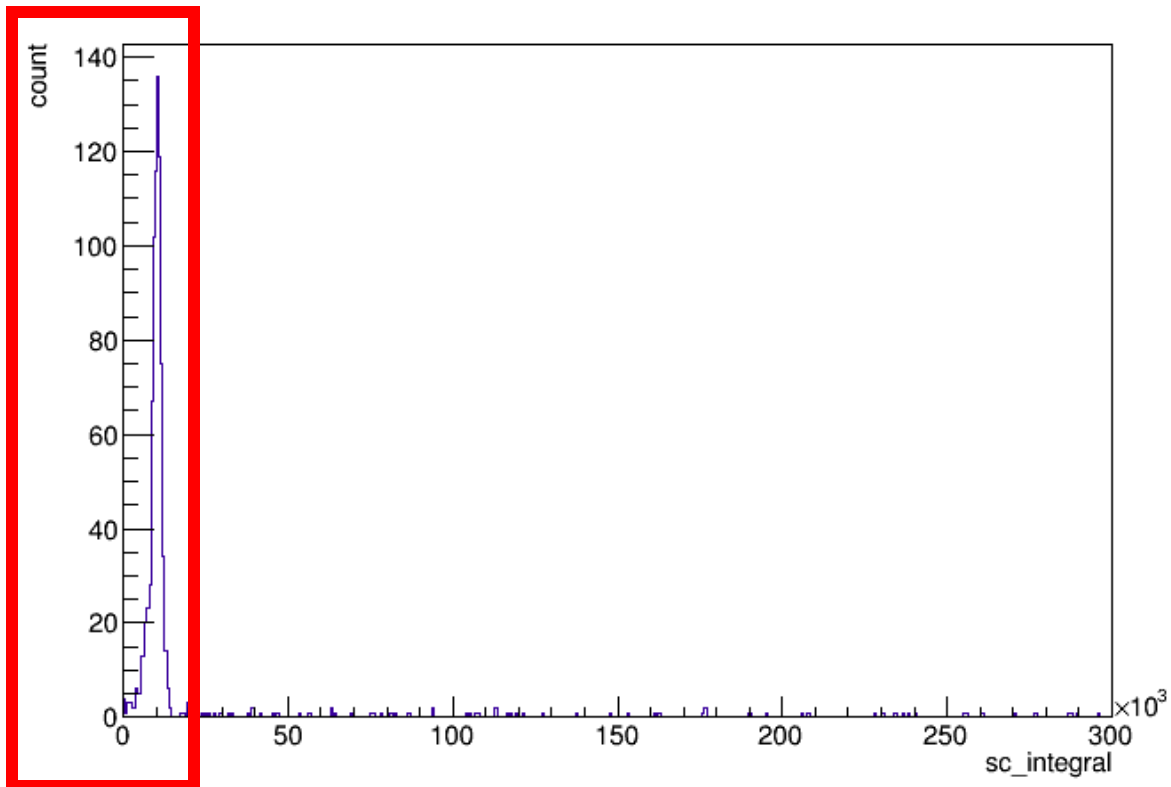
$\sqrt{pow(sc\_xmean - 2304/2, 2) + pow(sc\_ymean - 2304/2, 2)} < 900$

Occupancy of the cluster taken in exam

Varibles definition

Cuts:

sqrt(pow(sc_xmean-2304/2,2) + pow(sc_ymean-2304/2,2)) < 900

Others cuts applied:
sc_width/sc_length > 0.8
sc_rms > 6
sc_integral > 500
sc_tgausssigma > 0.3

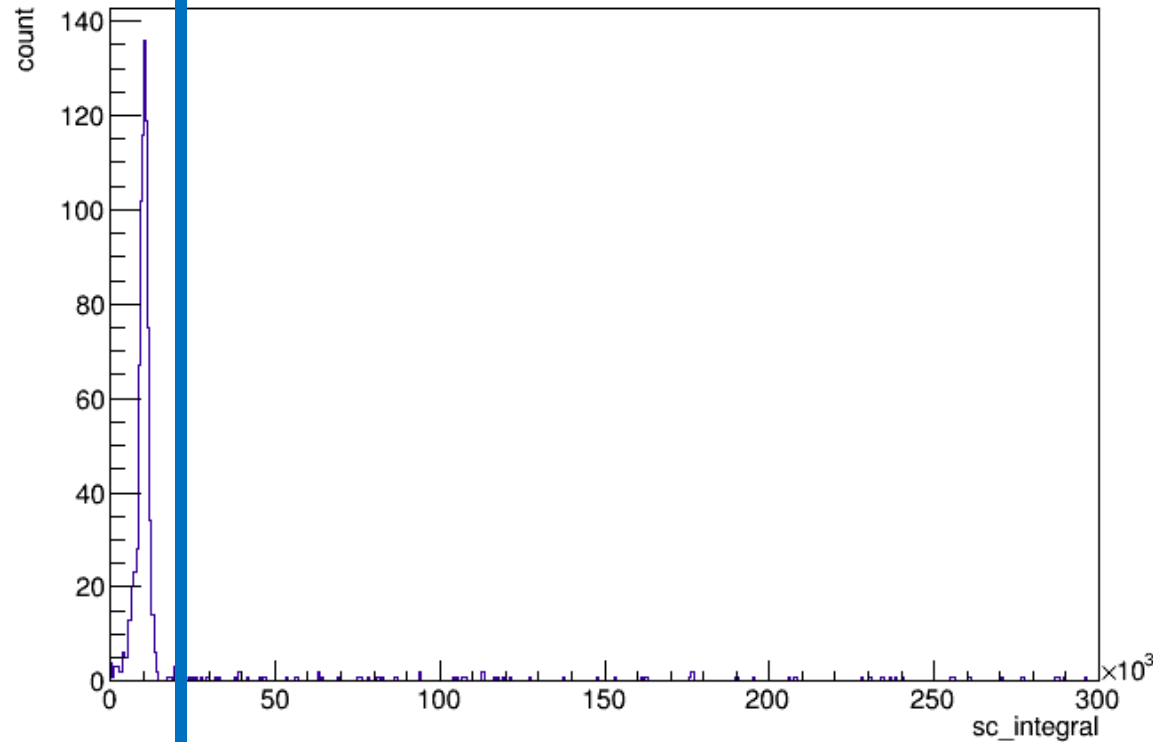The ^{55}Fe peak is fitted with the **Cruijff function** and the mean of the function defines the ^{55}Fe peak
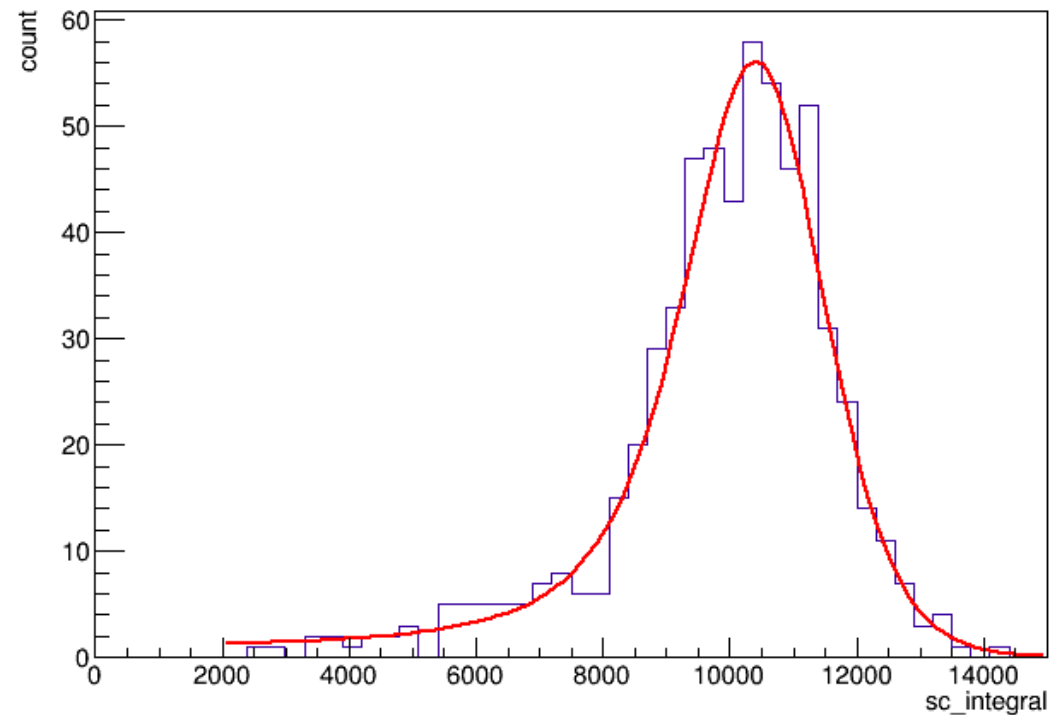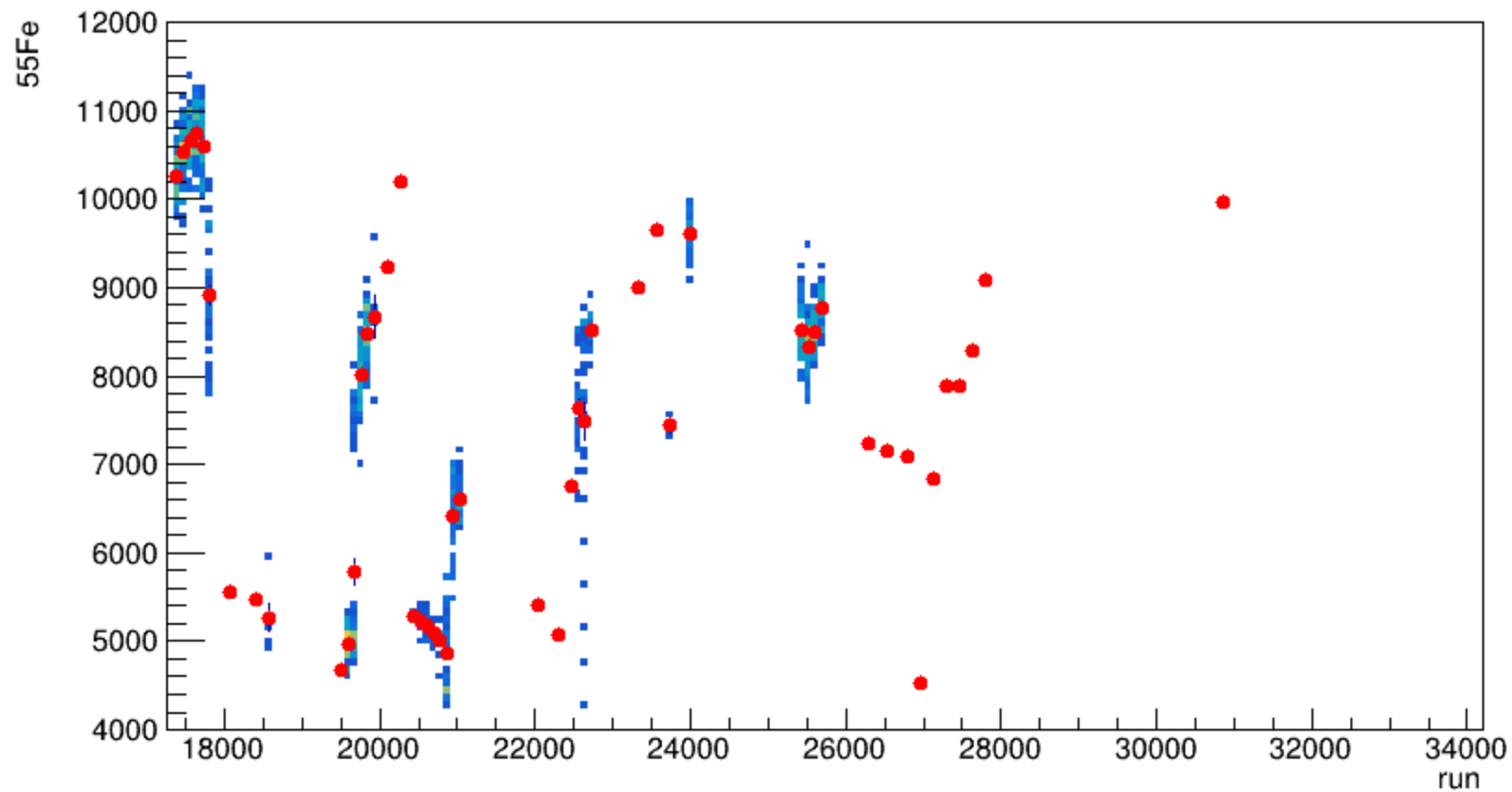
For each run the ^{55}Fe peak has been evaluated,

Bunch of run has been taken and the **average** has been evaluated

Varibles definition

Cuts:
sqrt(pow(sc_xmean-2304/2,2) + pow(sc_ymean-2304/2,2)) < 900

LY_30 = Mean in the range [30k ; 300k] of the sc_integral distribution

Varil...

Cuts:
sqrt(no...

**Why are we defining the LY_30?
To equilize the energy**

All the run with the
^{55}Fe peak are taken and ^{55}Fe peak vs
LY is plotted and a
linear fit is performed
The parameters are used to evaluate
the ^{55}Fe peak from the LY ->
in order to "calculate" the ^{55}Fe peak

For each run the ^{55}Fe peak has been calculated,

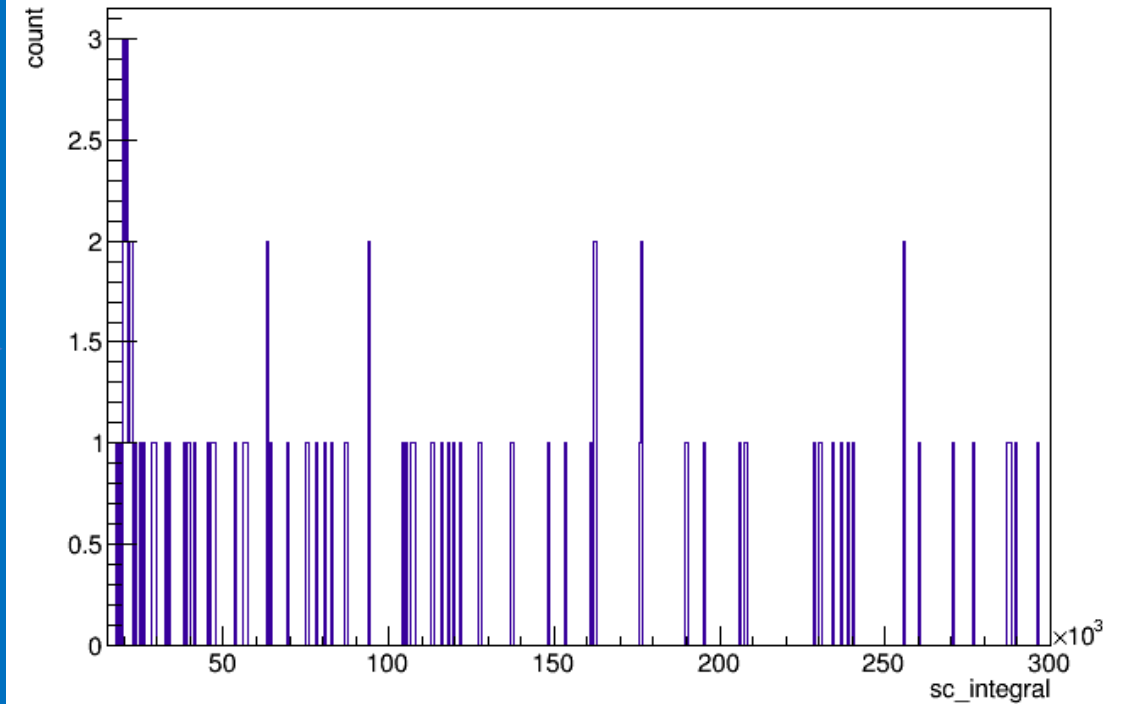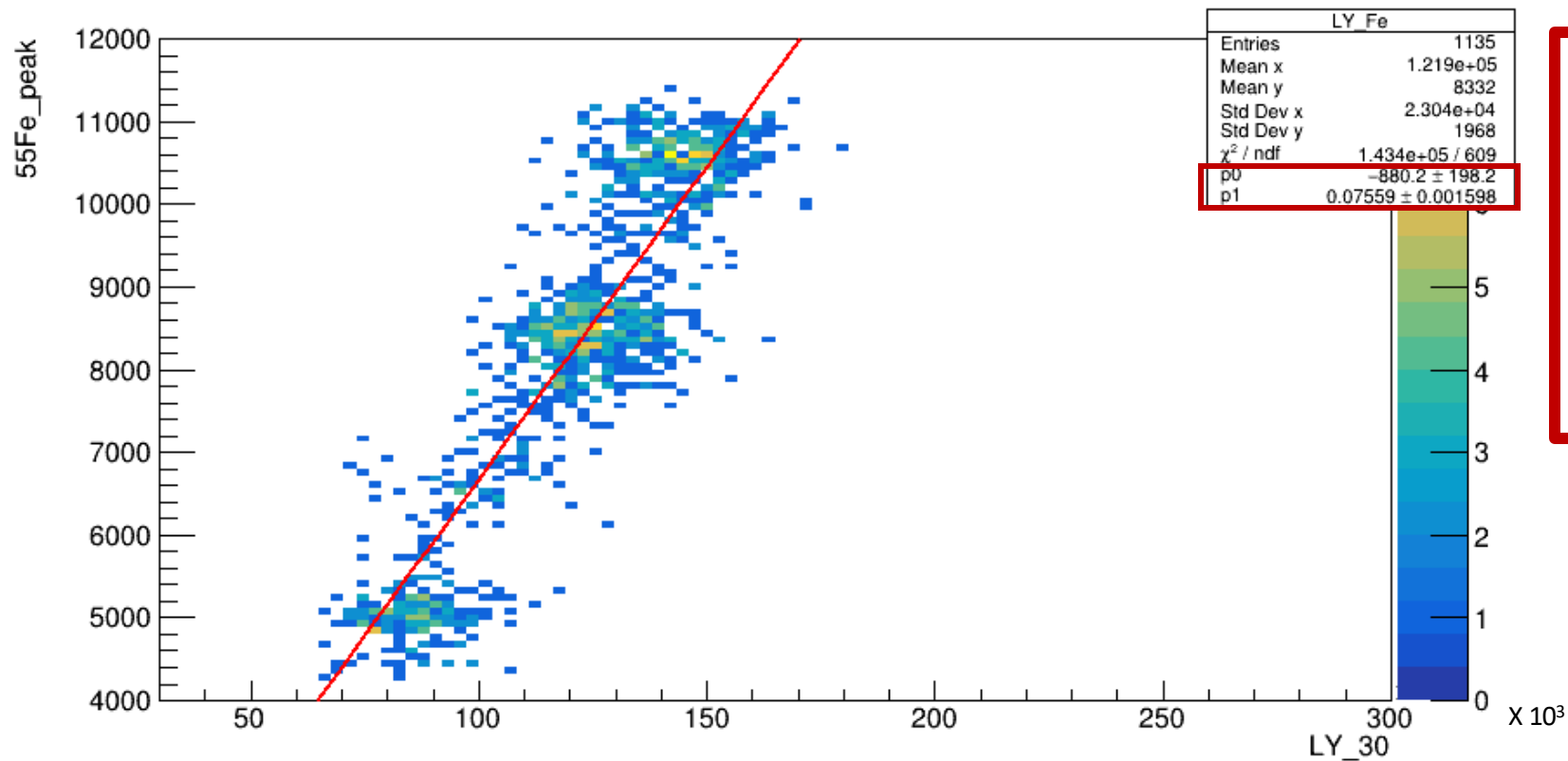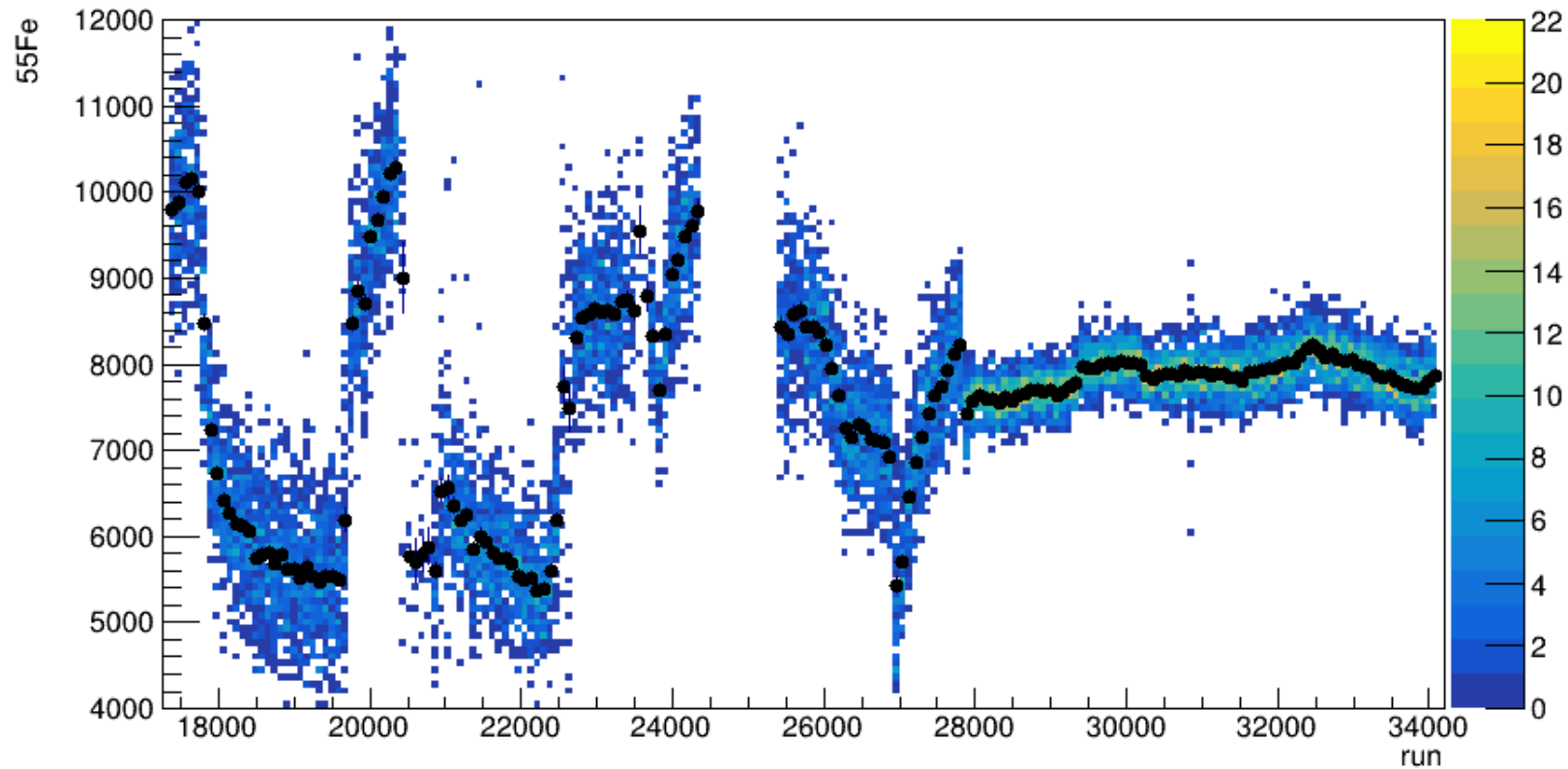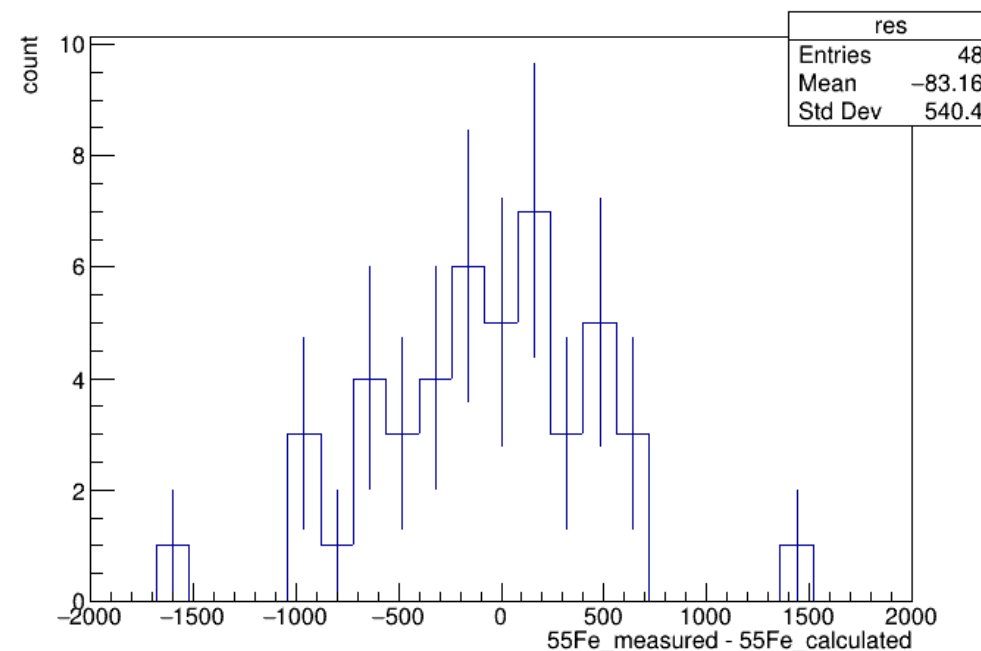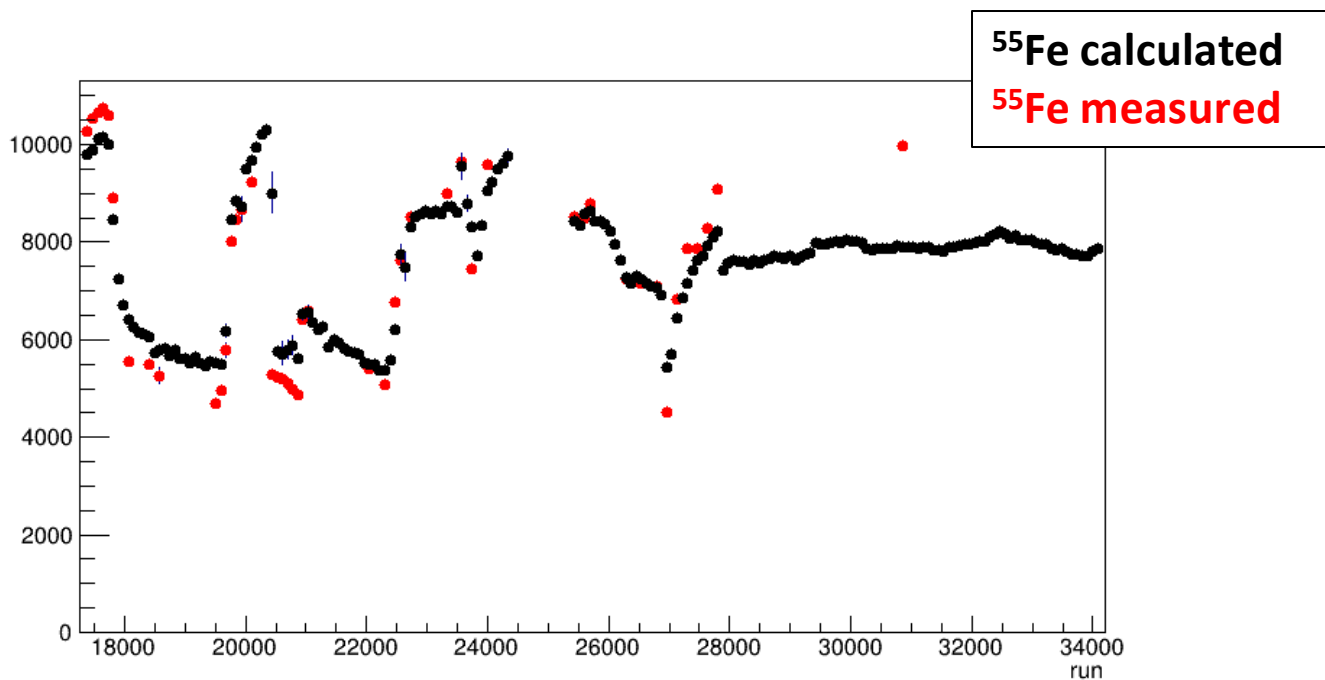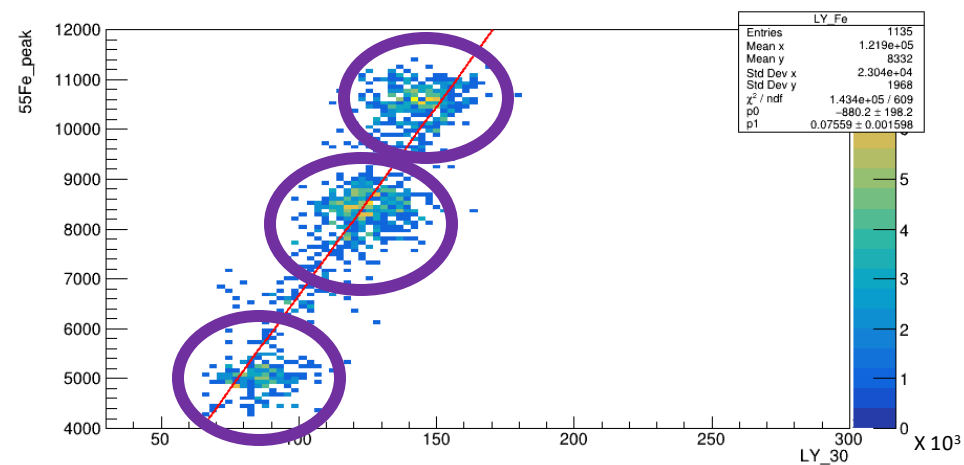Bunch of run has been taken and the **average** has been evaluated

Comparison between ^{55}Fe calculated and ^{55}Fe measured

^{55}Fe calculated
^{55}Fe measured
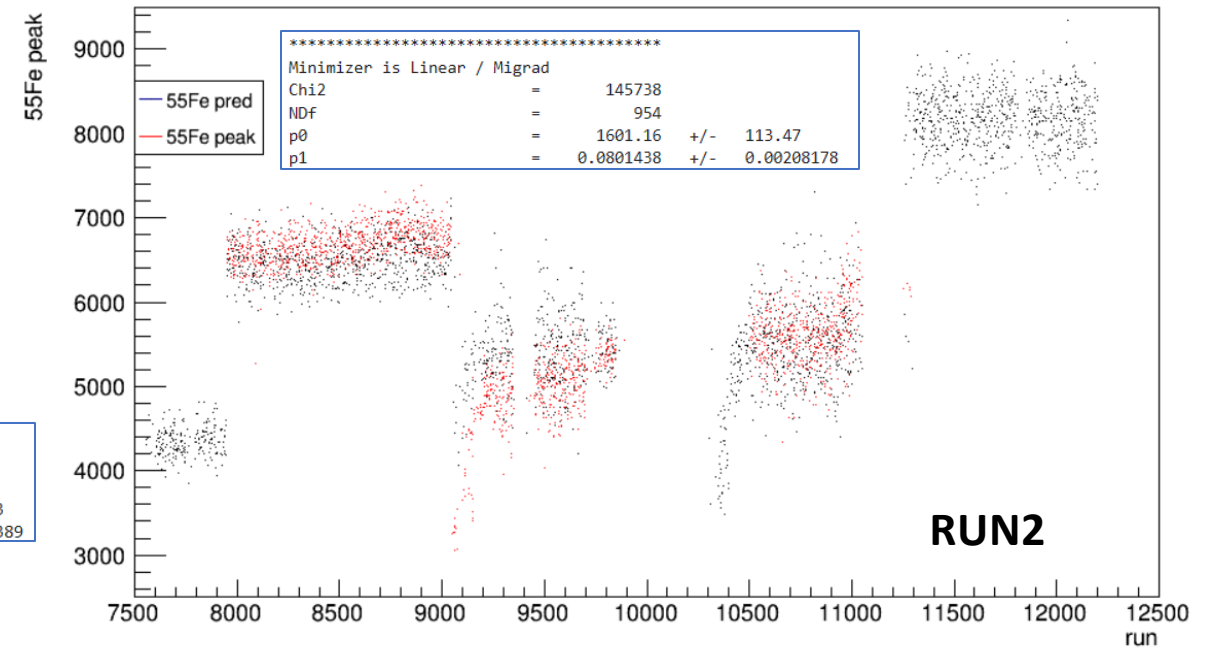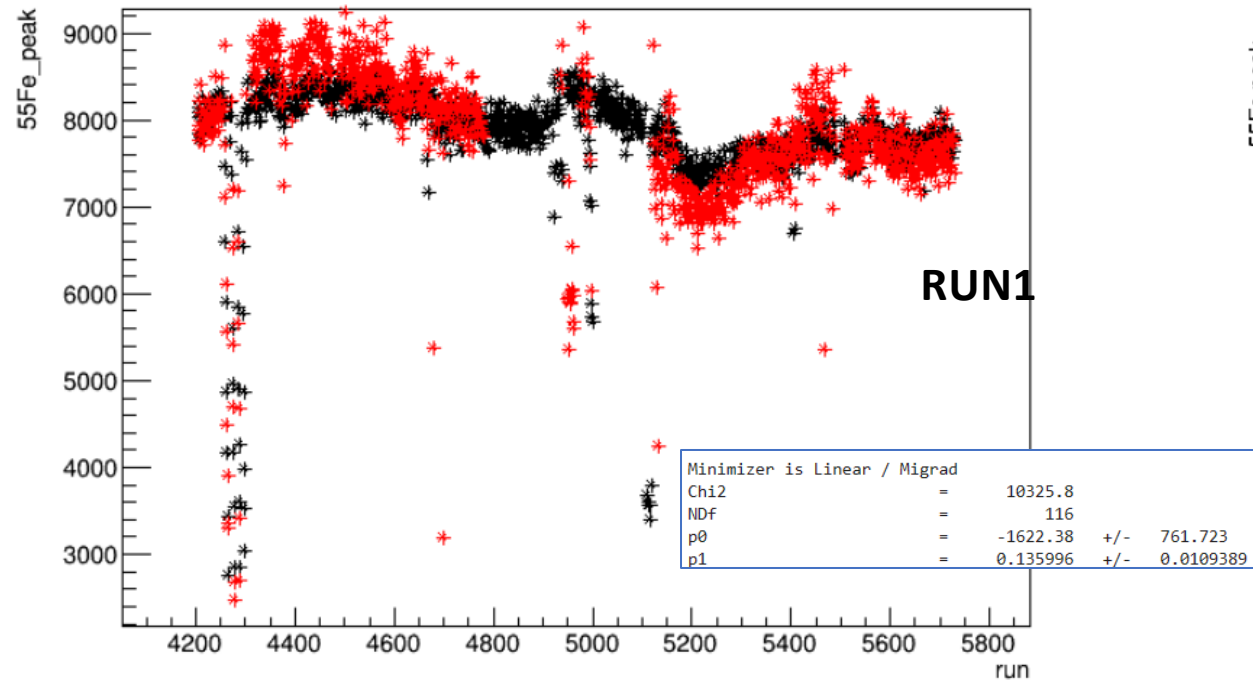

--> Optimise and validate the ^{55}Fe calculate variable:
Dividing the **three different region**

The same procedure has been applied for the Run1 and Run2

RUN1

Minimizer is Linear / Migrad
Chi2   =   10325.8
NDf   =   116
p0   =   -1622.38   +/-   761.723
p1   =   0.135996   +/-   0.0109389

RUN2

Minimizer is Linear / Migrad
Chi2   =   145738
NDf   =   954
p0   =   1601.16   +/-   113.47
p1   =   0.0801438 +/-   0.00208178
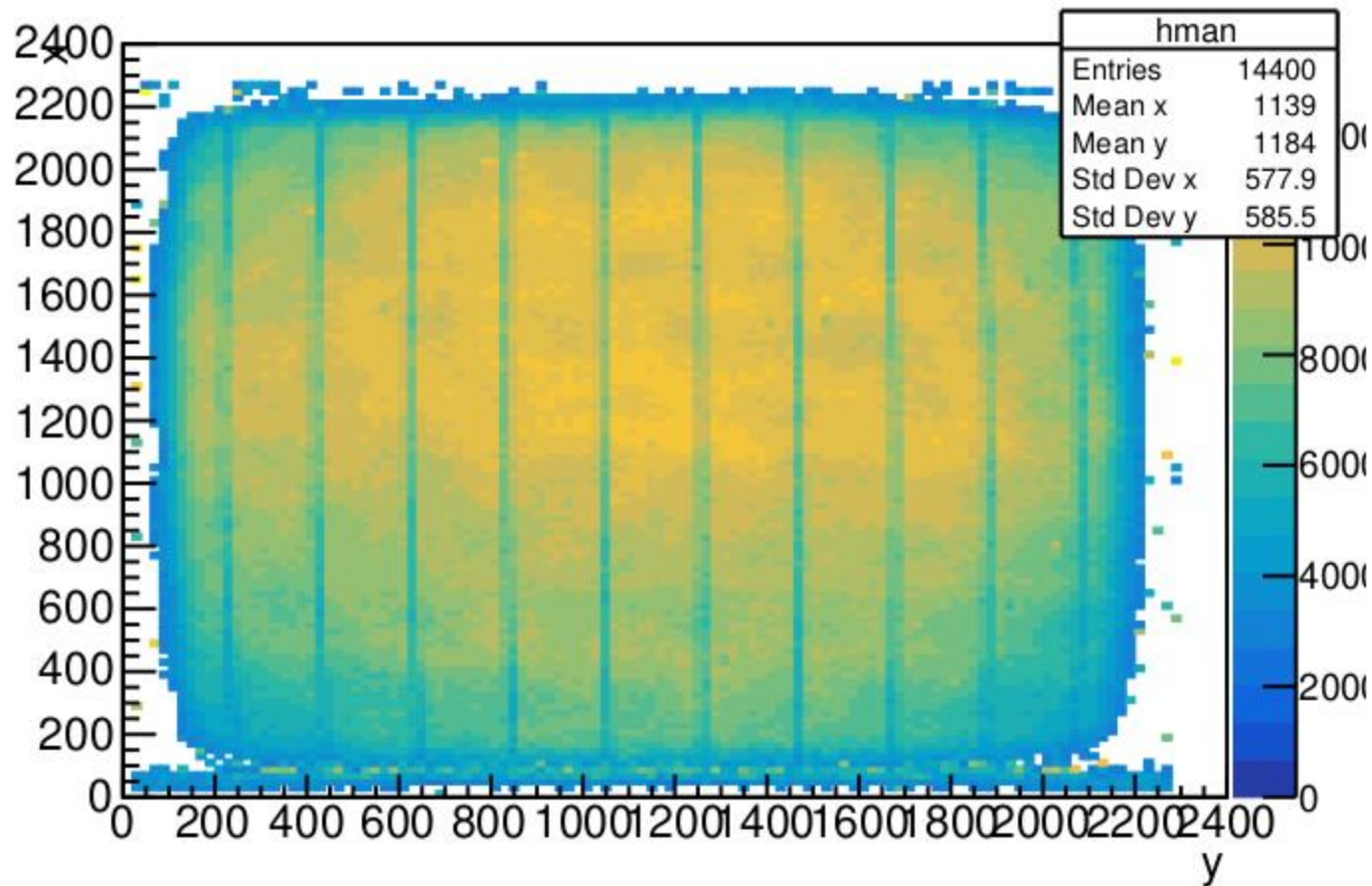
Map Correction

The map has been build summing many runs with the ^{55}Fe source placed at the position 17.5

Run_40505

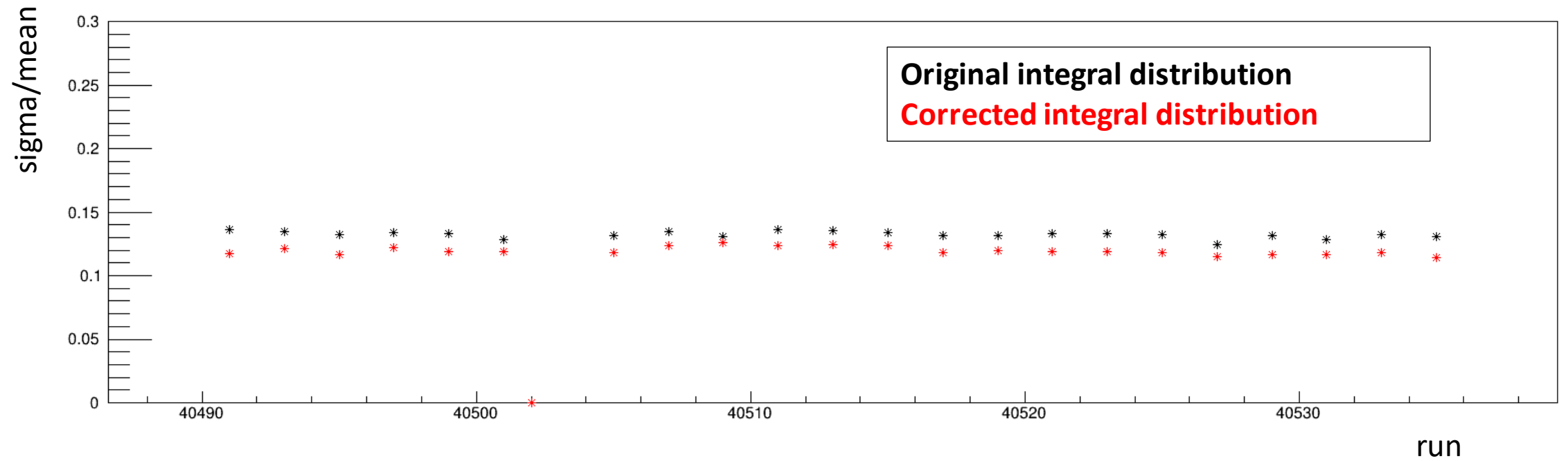| sc_integral_corr	
Entries	5461
Mean	6715
Std Dev	1208
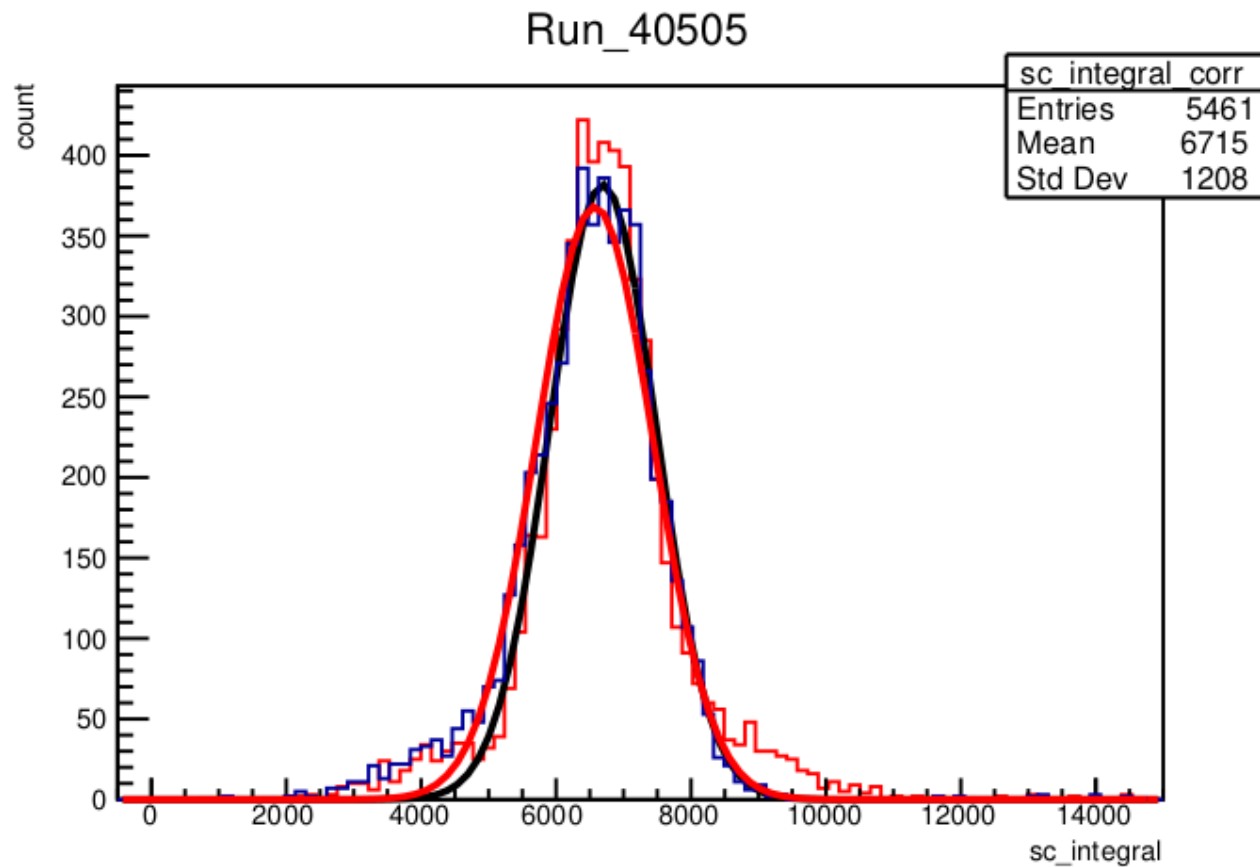
Original integral distribution
Corrected integral distribution

A gaussian fit on the ^{55}Fe peak has been performed

--> Applying the correction the integral distribution is more symmetrical

Applying the map correctio, the resolution improves

Next step

- Validate the LY_30 variables --> in order to equilize all the run at the same energy
- Validate the map correction