FC data analysis using two independent codes and runs.

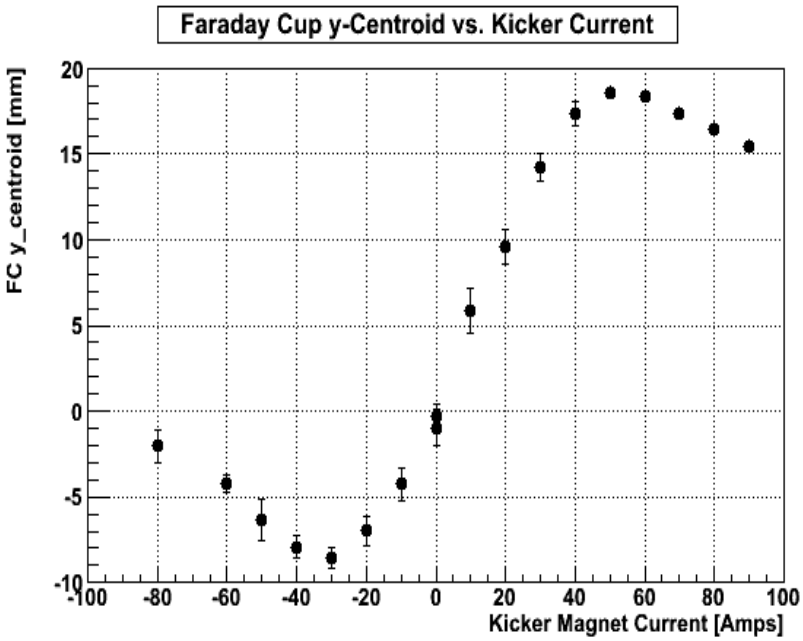

Fig. 1. Dustin's analysis of Y-centroid position. Runs 1848 – 1867.

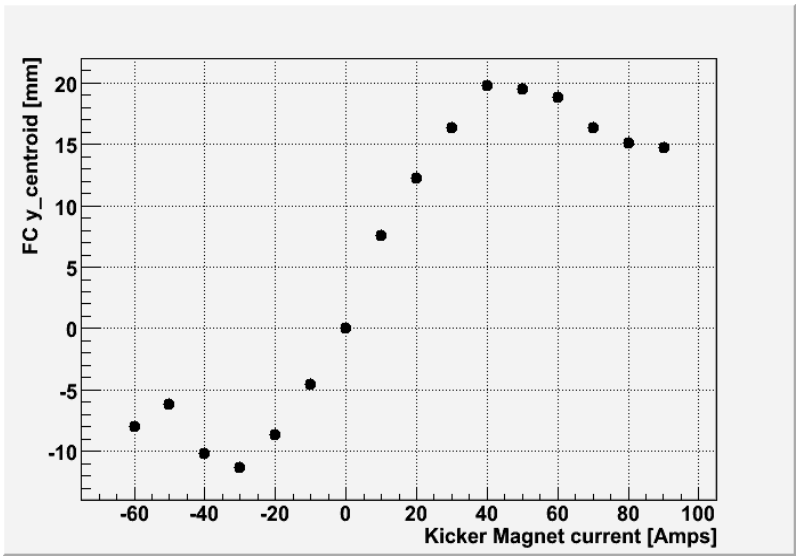

Fig. 2. Our analysis of Y-centroid position. Runs 1848 – 1867.
Pedestals were fitted with Gaussian in the range [40,120] channels.
Pedestal events were first 3k events. COG algorithm has been used.

Care should be taken of the pedestal fitting.

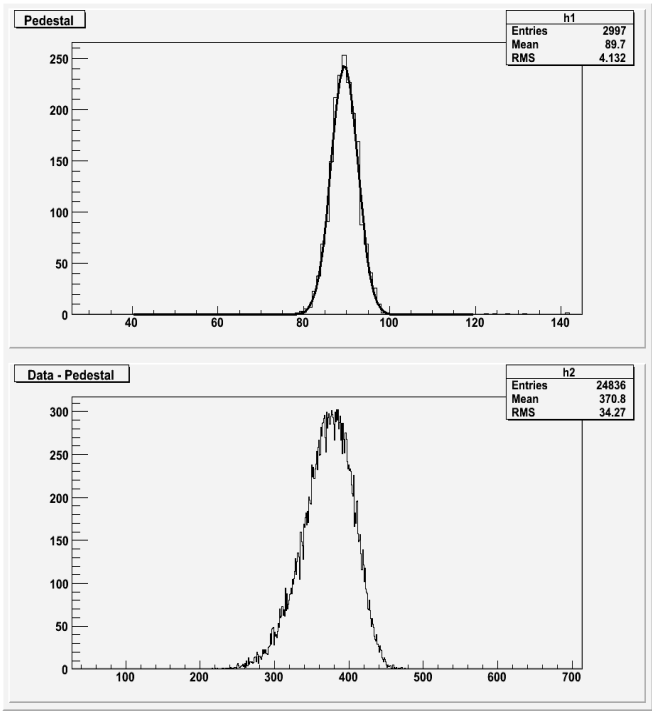

Fig. 3. An example of a pedestal fit for run with 0 Amps current. ADC#30 in FC is on the edge.

If we bend the beam towards the edge of the FC, the pedestals will be hard to fit as can be seen from Fig. 4. That might be the reason for strange behavior of Y-centroid at the edges of FC.

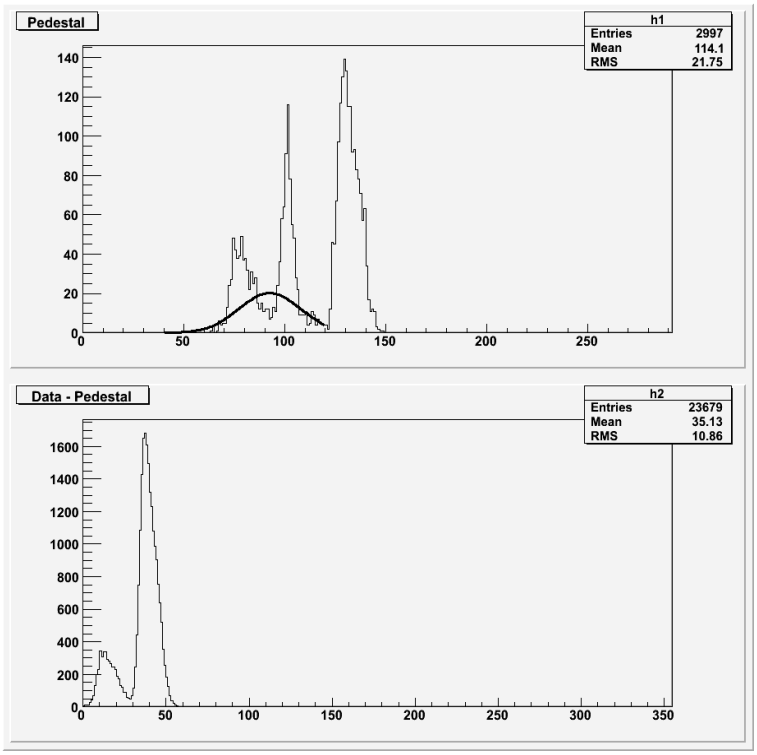

Fig. 4. An example of a pedestal fit for the run with 50 Amps current. ADC#30 in FC is on the edge .

Below we analyzed another calibration run of FC. The values of the pedestals were taken to be just a mean values in the pedestal events distribution.

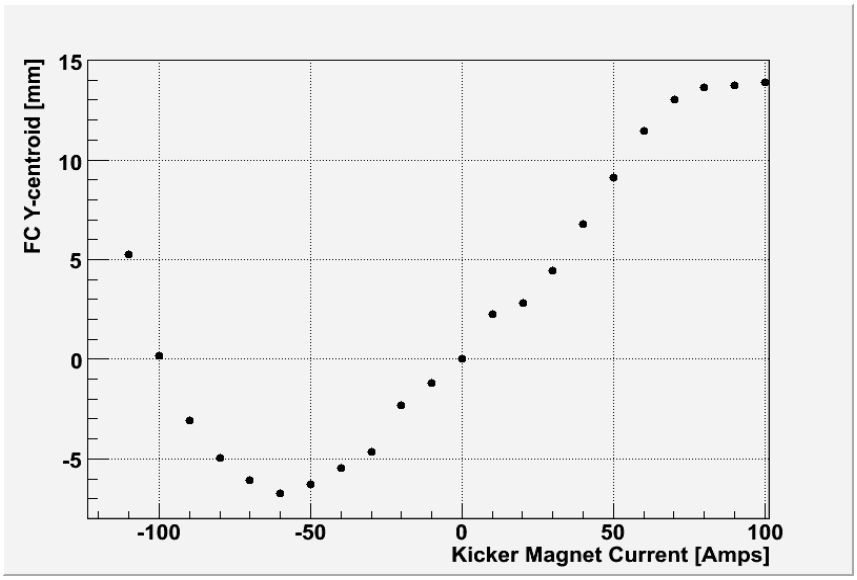

Fig. 5. Our analysis of runs 1877 – 1899 (pp. 24 – 25 in the log book).
No collimation in front of the FC. 25 MeV e- beam. COG algorithm has been used.

Let's compare plots above with the FC calibration obtained by fluorescent screen and camera (see Fig. 6), we may notice that Y-centroid position is different after the current value +50/-10 amps .

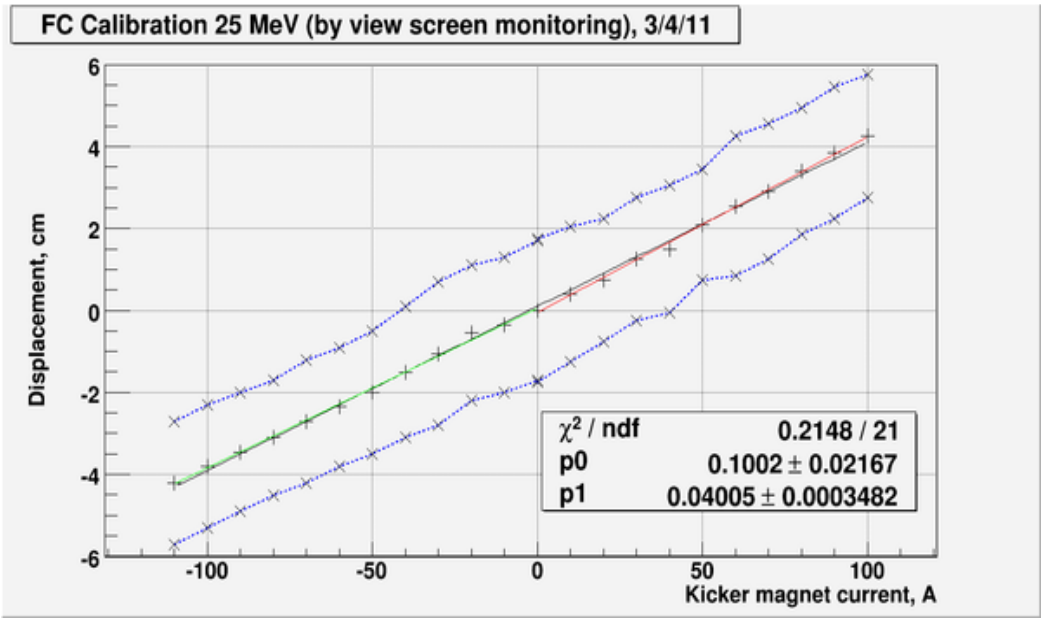

Fig. 6. FC calibration obtained by fluorescent screen and camera.

Conclusions.

We need to understand better the structure in the pedestal events distribution and in the main data region (see the lower plot in Fig. 4) for the currents above +/-(40-50) Amps, and how to fit the pedestal events to get the right value of the pedestal.

We also may want to understand the electron beam profile before if goes through the kicker magnet and how it is distorted by the kicker magnet B-field such that the position can not be reproduced correctly.