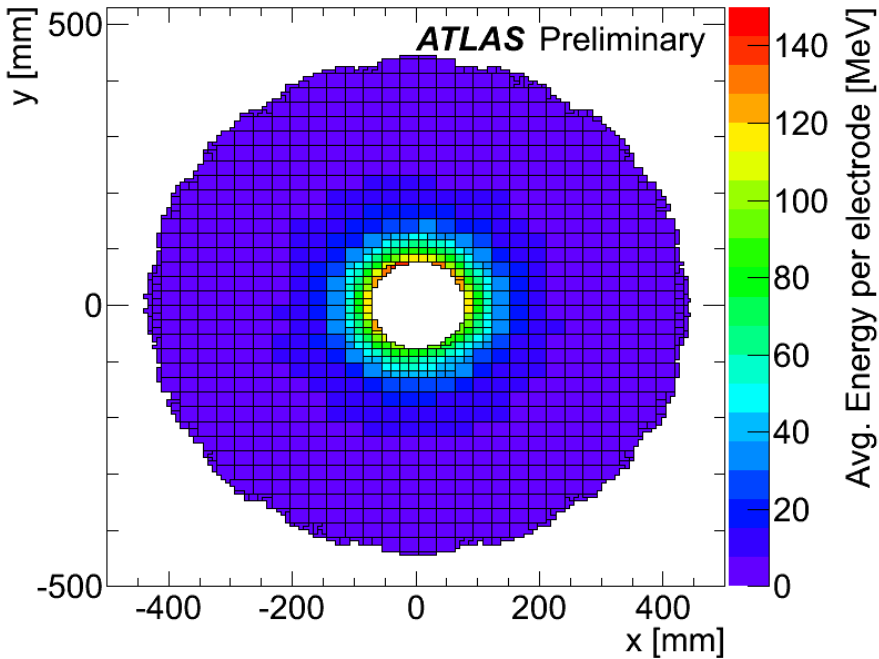


FCal1C

7 TeV data



FCal Energy Density

- ▶ **Purpose:**

Illustrate that the energy density is sensitive to the relative position of the FCal relative to the beam spot

More energy at a given $\phi \rightarrow$ closer to the beam spot

We use this quantity to measure the position of the FCal

- ▶ **Caption**

Average energy per event and electrode read out in the electromagnetic layer of the C-side (negative z) FCal in 7 TeV collision data. The 1006 readout cells each consist of 16 or 4 electrodes and are here enclosed with black lines. The upper half of this module sees more energy than the lower half, indicating that the FCal is located a bit low relative to the beam spot.

FCal Energy Density

- ▶ Made from 7 TeV run 152166
- ▶ The average energy per electrode for each FCal1 channel:

$$E_{\text{tot}} / (N_{\text{events}} \times N_{\text{electrodes}})$$

$N_{\text{electrodes}}$ is the number of electrodes per channel (4 for the small channels, 16 for the bigger ones)

- ▶ Each electrode and its surrounding absorber matrix covers about 2 cm² of the front-face of FCal1
- ▶ All events in good lumiblocks are included
- ▶ Plotting macro heavily based on code written by Sven Menke