Slide 1

- One of the first necessary steps in order to operate the chip is to determine the threshold of charge, at which the pixels of the chip will register an event.

Slide 2

- We're using only a fraction of the chip which serves as a representation, since masking the entire chip would take really long.

Slide 3

- At some charge, the pixel will start firing.
- In this region of smearing, assuming the electronic noise is gaussian, the hit problity can be modeled with gaussian error function

Slide 4

- After a run has completed, we get the distribution of the thresholds of all pixels. We then extract the mean of those thresholds, and repeat the measurement with different settings, to get a reference that helps us to determine how the chip has to be configured for our experiment
- Just to look at a quick reference, In the case of cosmics, we expect an energy deposit of 0.03 MeV in the pixel, which is about 7900 e-h-pairs, so in our analysis, what we'd **like** to see, is that the telescope is 100% efficient.
- The error comes from the RMS of the standard deviations

Slide 5

- Another scan we did is the noiseoccupancy scan, which gives a selectable number of random triggers and returns the number of hits. If the threshold is too low, some pixels will register a hit, due to electronic noise. This is what's called "Fake hit rate"
- Now this a measurement taken at no back bias. The sensitivity limit is 1 over the amount of times triggered, times the number of pixels.
- as you can see the chips fhr deminishes drastically when applying a back bias voltage