Distribution over glitch heights.

Draft 1, October 1st, 2004

Following the discussion on the September 21, 2004 at the "Radiation meeting" in Garching I have determined the distribution of the voltage jump due to glitches on the second day of UCL-CRC data taken in december 2003.

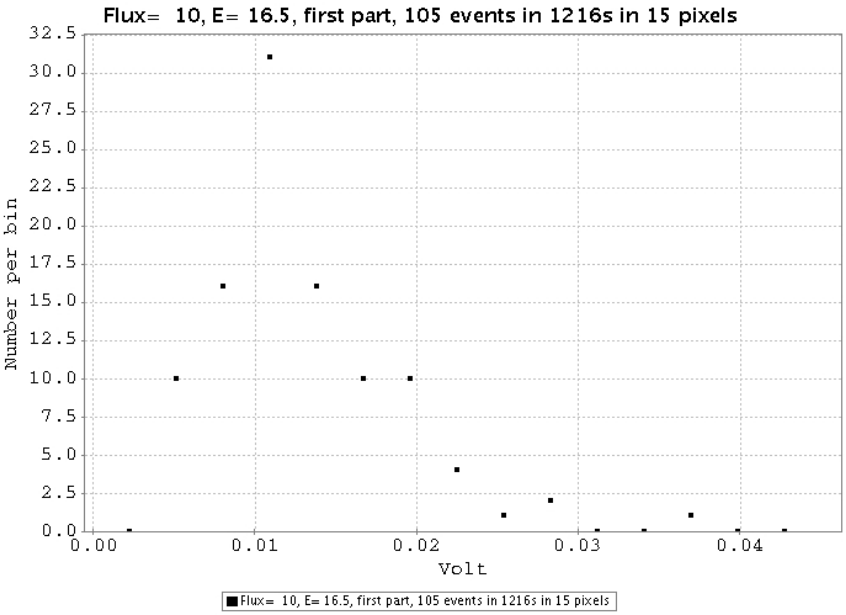
I have used the rampDeglitching.py algorithm developed by Jürgen Schreiber (MPIA), slightly modified by Pierre Royer, to give the voltage jump predicted at the read-out of the glitch, rather than the voltage difference between the read-out of the glitch and the read-out just before.

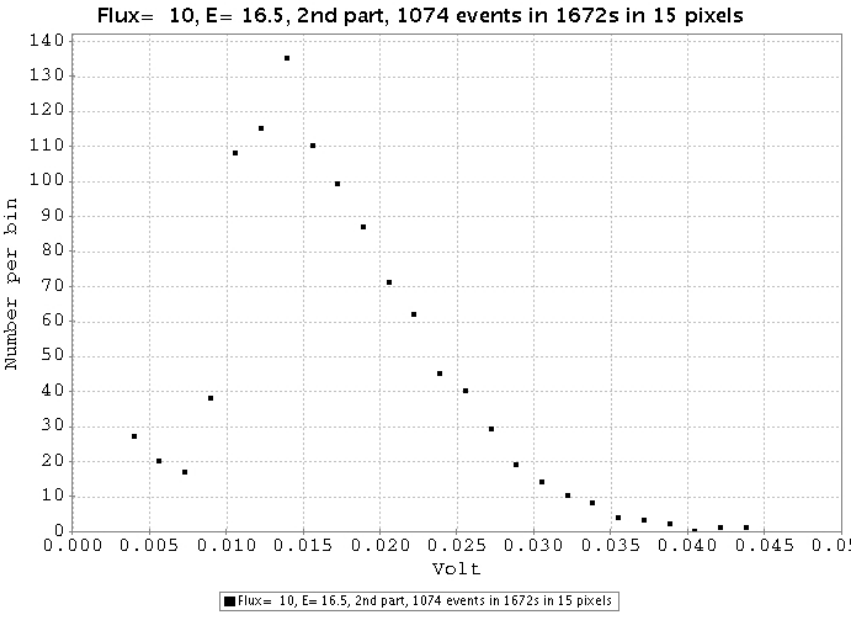
Table 1 summarizes the results, and Figure 1 displays the distribution over the glitch height for the 4 cases where there is enough statistics to make a reasonable histogram. The longest set of data with 10 p/cm2/s and 16.5 MeV protons is splitted into the first and last quarter of the relevant files to illustrate the difference is number and distribution of glitches due to the increase in responsivity.

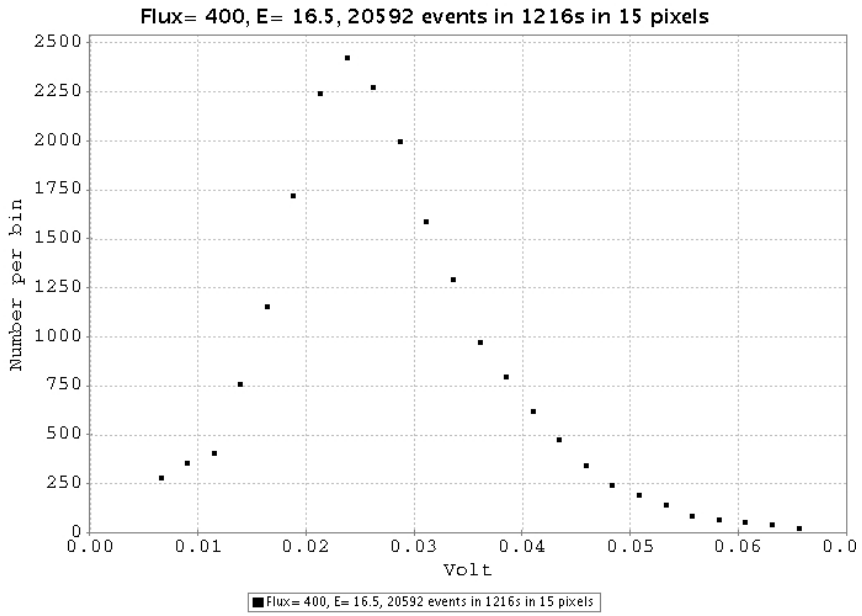
Its important to note that the glitch rate and distribution does depend on some of the implicit and explicit assumptions made in the script, e.g. the first few and last read-outs are not investigated for glitches, and certain sigma-cutoff levels have been specified.

Table 1: Properties of the glitches over 15 detectors

pre-beam	7 events in 726 sec	between 0.008 and 0.032 Volt
10 p/cm2/s, E= 16.5 MeV; 1st quarter	105 events in 1216 s	
10 p/cm2/s, E= 16.5 MeV; 4th quarter	1074 events in 1672 s	
400 p/cm2/s, E= 16.5 MeV	20592 events in 1216 s	
10 p/cm2/s, E= 6.5 MeV	4 events in 1216 s	between 0.006 and 0.010 Volt
400 p/cm2/s, E= 6.5 MeV	33 events in 1166 s	


Flux= 10, E= 16.5, first part, 105 events in 1216s in 15 pixels
Number per bin
Volt
Flux= 10, E= 16.5, first part, 105 events in 1216s in 15 pixels


Flux= 10, E= 16.5, 2nd part, 1074 events in 1672s in 15 pixels
Number per bin
Volt
Flux= 10, E= 16.5, 2nd part, 1074 events in 1672s in 15 pixels


Flux= 400, E= 16.5, 20592 events in 1216s in 15 pixels
Number per bin
Volt
Flux= 400, E= 16.5, 20592 events in 1216s in 15 pixels

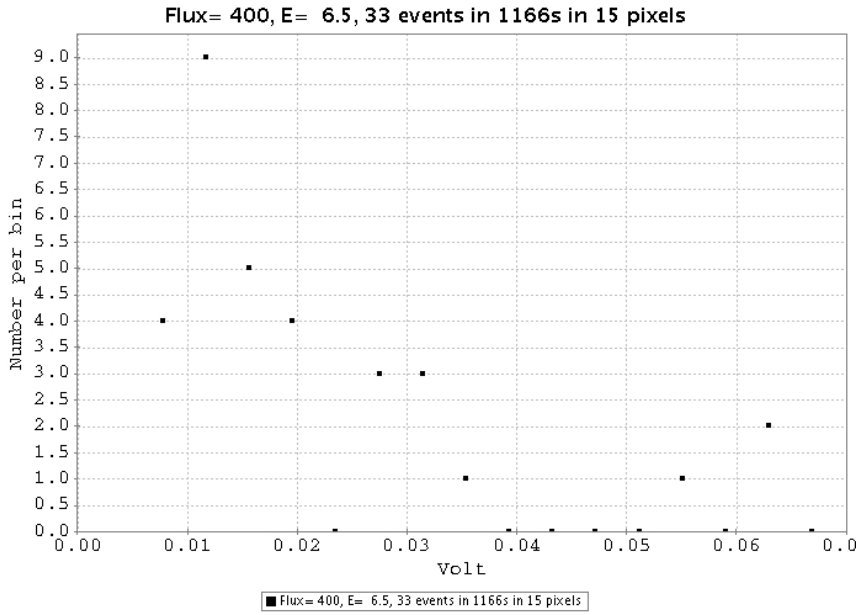

Flux= 400, E= 6.5, 33 events in 1166s in 15 pixels
Number per bin
Volt
Flux= 400, E= 6.5, 33 events in 1166s in 15 pixels

Figure 1: