Recent activities

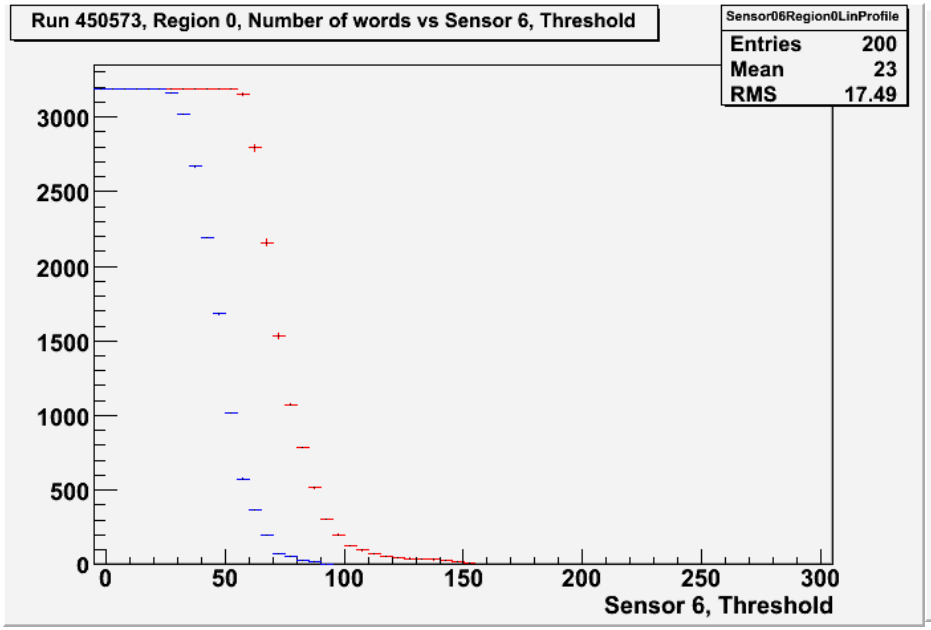
Jamie C

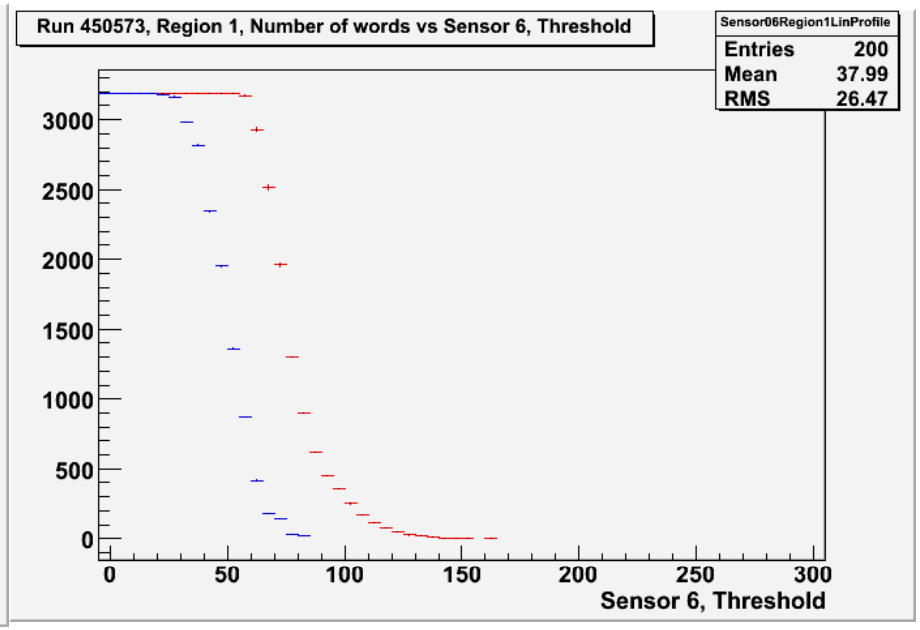
23rd April 2008

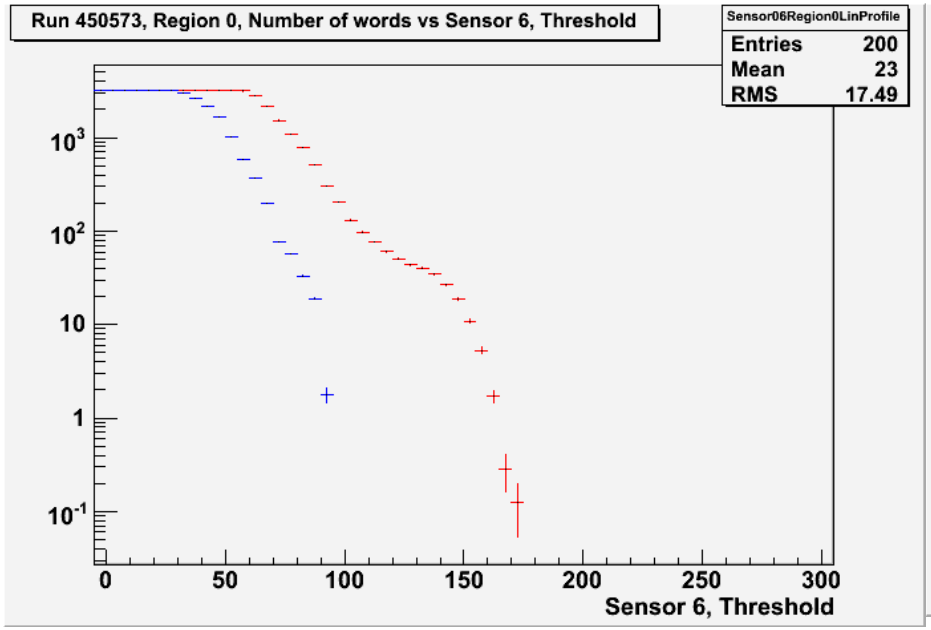
Threshold scans in reset

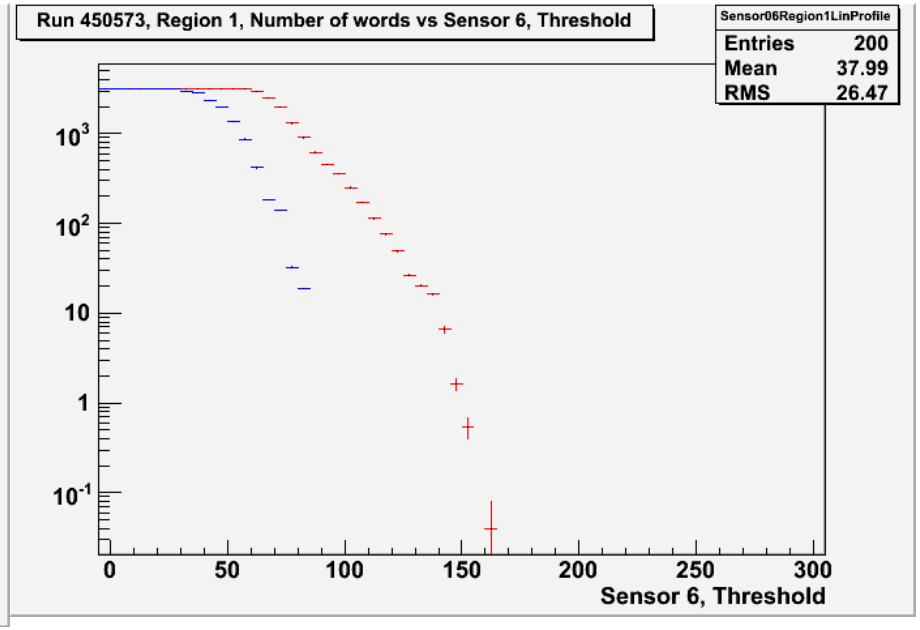
- Concept
  - Perform a threshold scan while holding different parts of pixel in reset to help identify noise sources in the pixel
- Practicality
  - Can’t hold sampler preamp in reset, as this is wired to “hit” output (memories fill up immediately with hits)
  - Can hold diode in reset and re-scan samplers
  - Can hold shaper in reset and re-scan shapers

Shapers: with/without amp reset

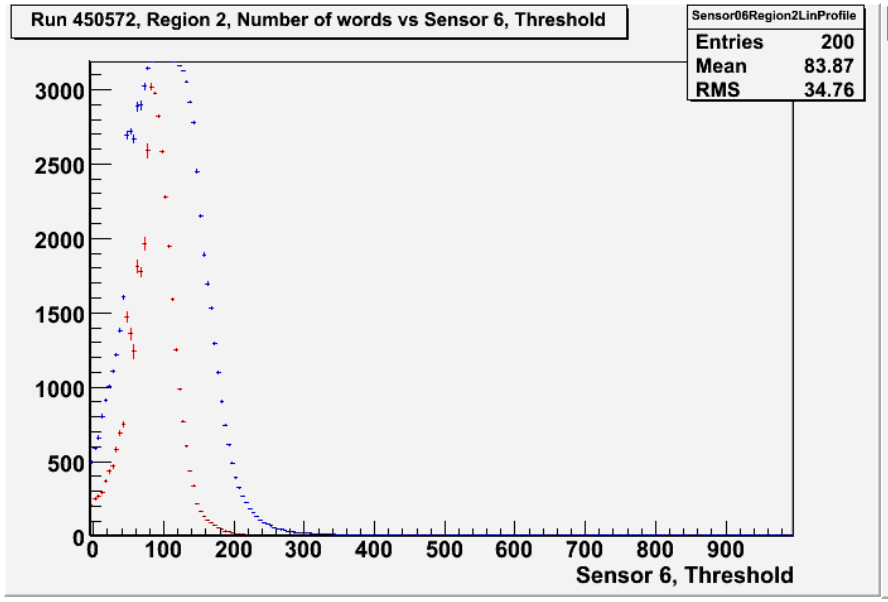


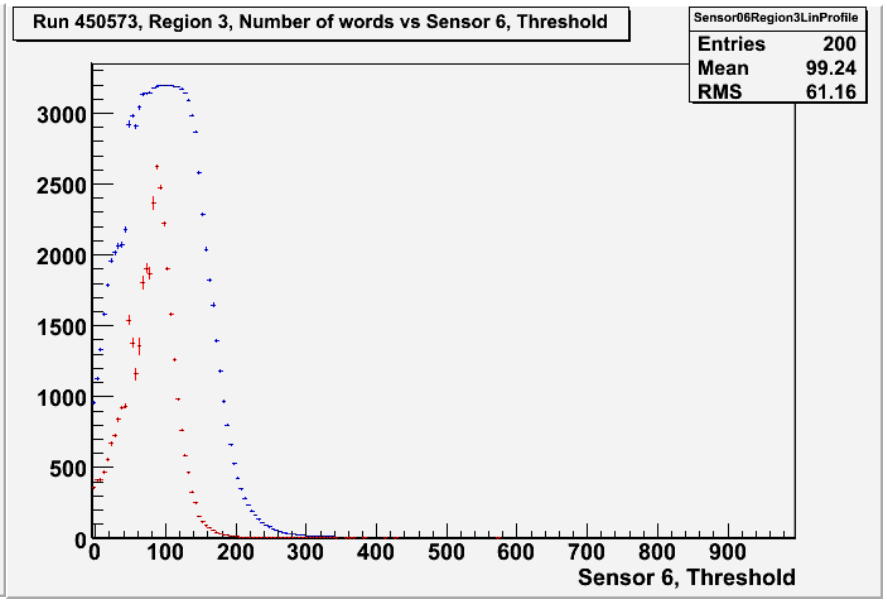


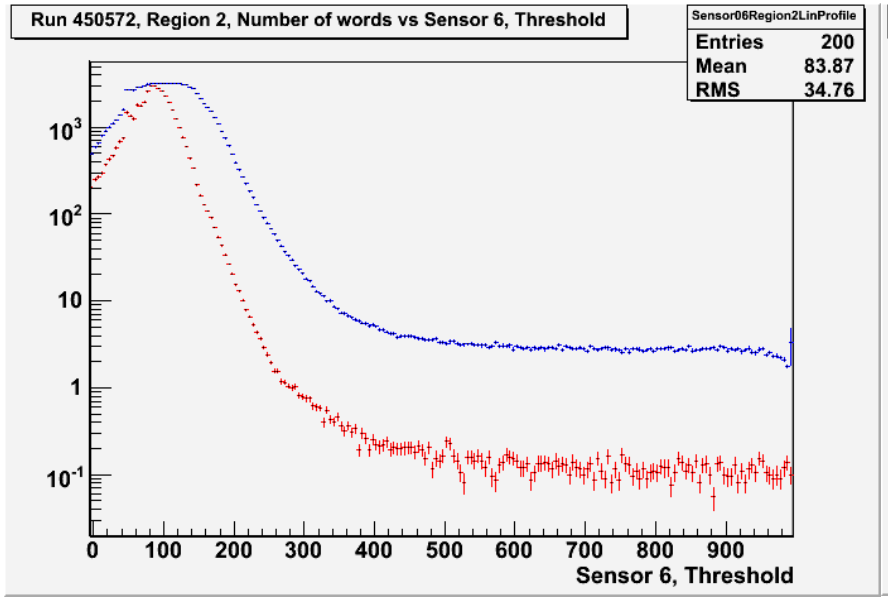


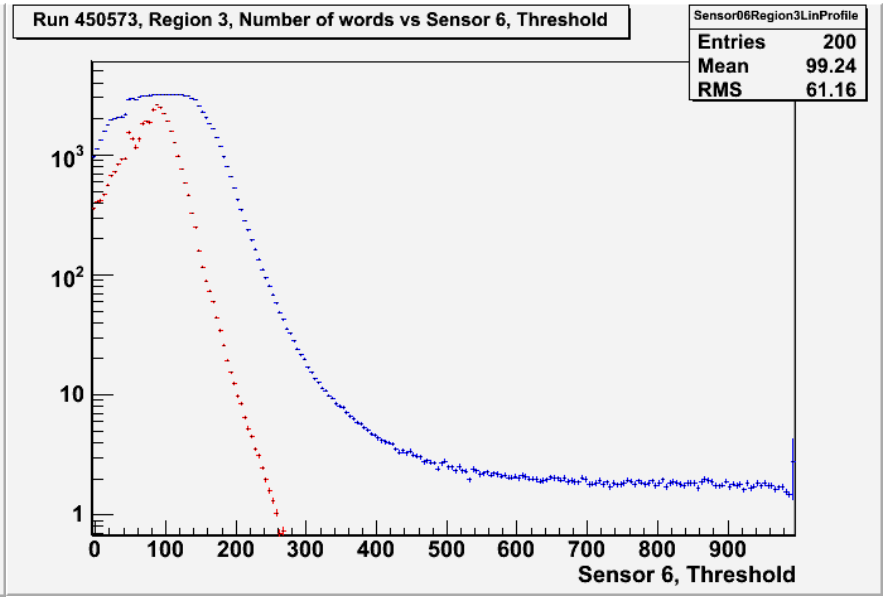


Samplers: with/without diode reset









Bonding

- Previously seen that many W10 parts fail
  - ORE signals do not emerge from column 0 during readout
- Bonded two PCBs with W8
  - Both pass basic tests
    - SensorLoad
    - ORE signals ok
  - One good threshold scan (#13)
  - One poor threshold scan (#19)
- Three more PCBs in for bonding W8

Per-Pixel scans

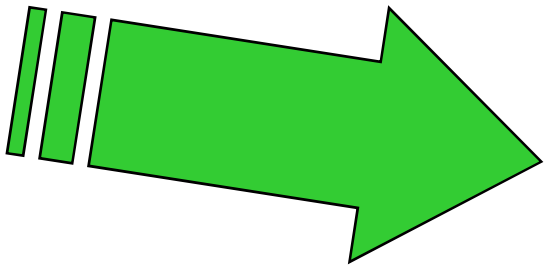
Runs	Sensor	Range	Points	BT/point	Notes
450256 à 450297	16	0 à 500	50	100	Test run (low statistics)
450303 à 450344	16	0 à 500	500	1000	50GB
450588 à 450629	6	0 à 500	500	1000	50GB
450674 à 450716	16	-250 à 250	100	200	70MB
450752 à 450793	16	-250 à 250	100	200	TrimFile2.txt applied
450798 à 450839	16	-250 à 250	100	200	Single unmasked pixel per region: test run to understand twins

** early indications are the sensor trimming works fine with only the low-statistics (70MB) datasets, meaning we can calibrate sensors without lengthy runs and processing.*

(The high statistics runs may still be useful for detailed analysis/papers)

Other activities

- Board #7 (from Nigel) seems fine
  - No problems found reading/writing DACs
  - One power jumper missing
  - Threshold scans look ok
- Working with Owen
  - Analysis of per-pixel scans…
  - Investigate “twins”



Per-pixel scans

(1 of 42)

- Active pixels (cyan)
  - Unmasked and generating hits ü
- Dead pixels (green)
  - disappear when threshold scan includes negative range
- Pixels that (appear to) fire when masked
  - Do seem to have a layout dependence (ie the pattern often repeats four times across the sensor
  - Do have a very low number of hits
  - Are not due to coupling from one “hit” line to another
  - Seem to be found on a per-bank basis
  - Are still under investigation!