

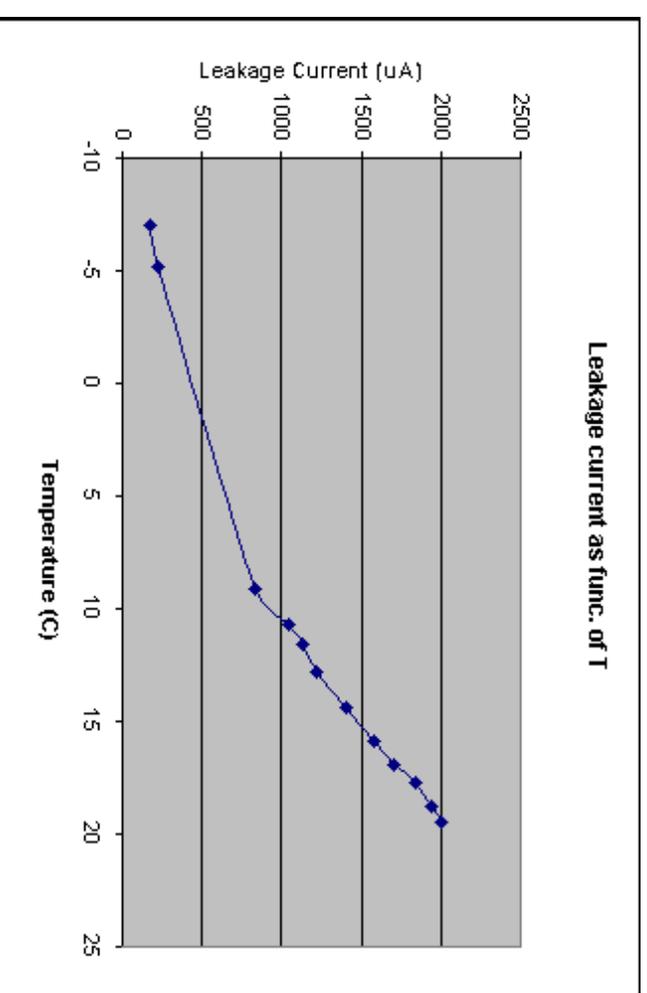


Irradiated module - Temperature dependence

Leakage current

The temperature measurement is rather inaccurate.

Both the temperature and the current rise during every measurement.

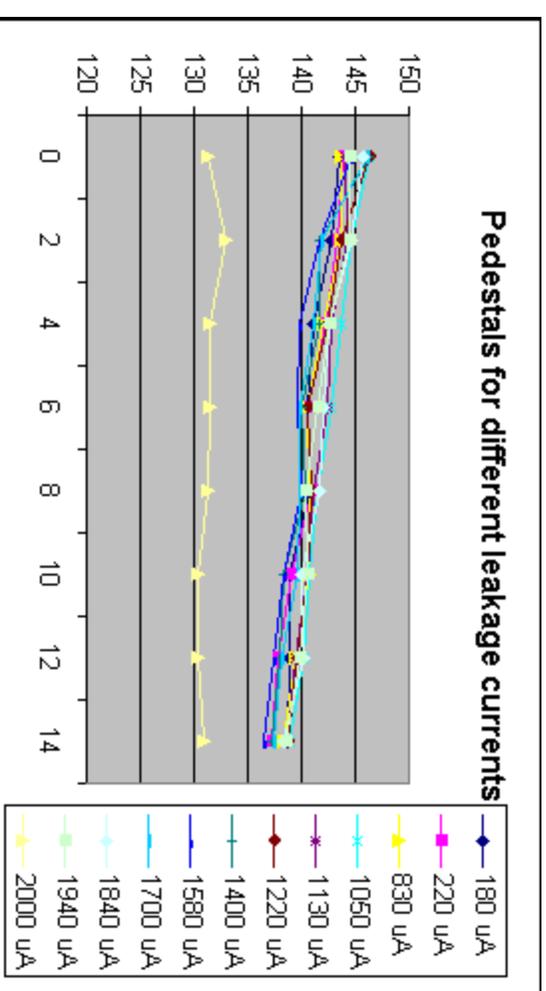




Pedestals

The pedestals get lower with higher bandwidth setting (~ 5 counts).

Something happend before the last measurement (I moved the freezer).



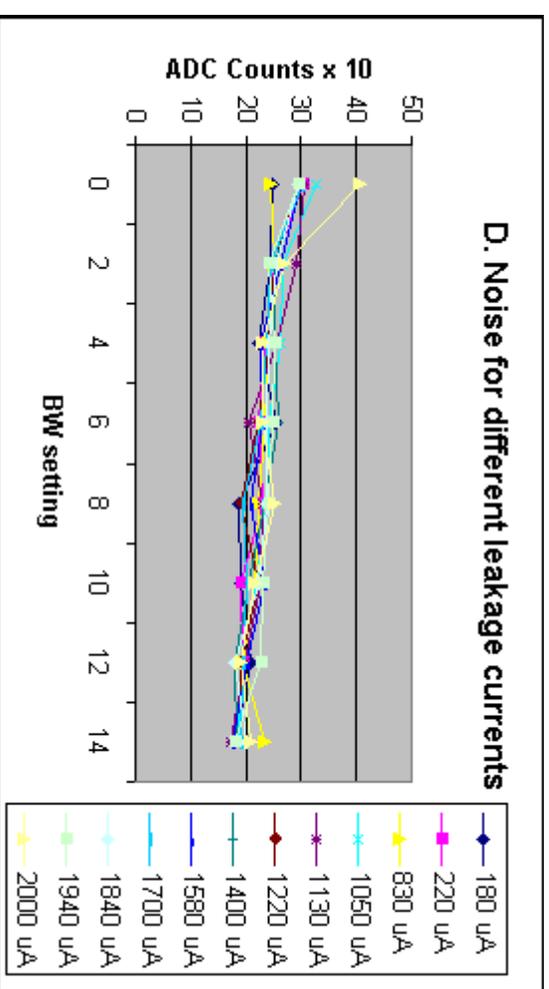
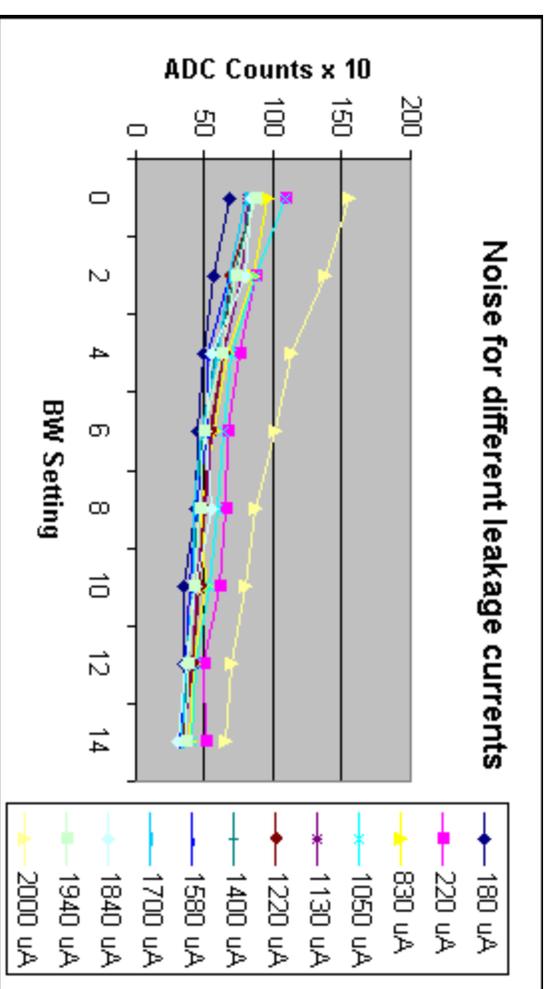


Noise performance

There is no change in the BW dependence of the noise although the leakage current increases by a factor of 10, from 180 μA to 2000 μA !

$$\text{Shot noise: } \propto \sqrt{I_b \tau},$$

i.e. the contribution should increase with leakage current and BW setting.



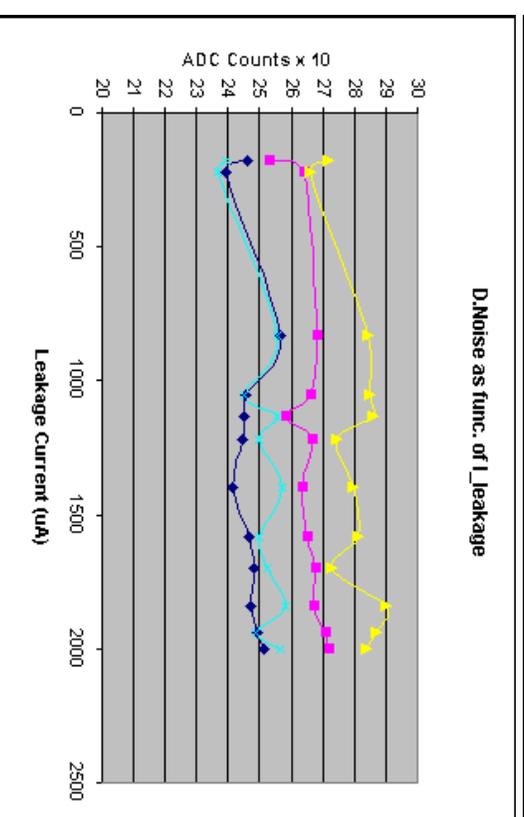
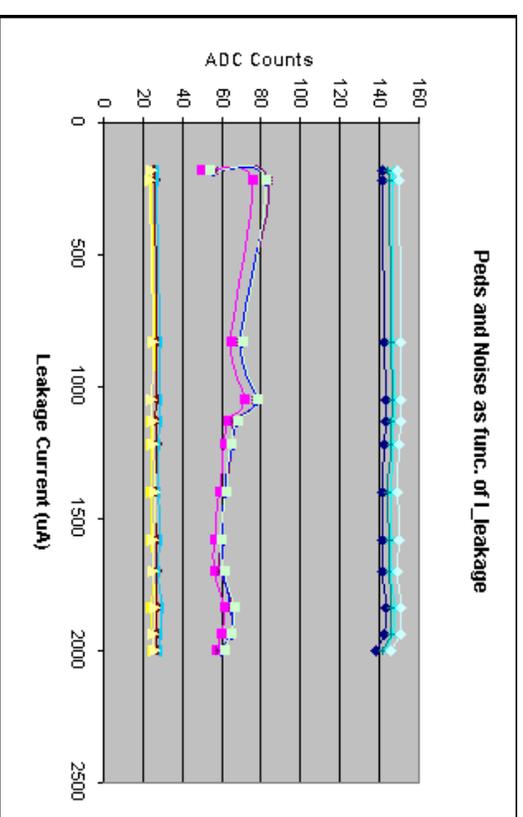


Noise performance

These measurements are based on 2000 events instead of 100.

The BW setting is 4.

Neither the pedestal nor the noise seem to be changing much as a function of the leakage current (but they do look a bit strange).



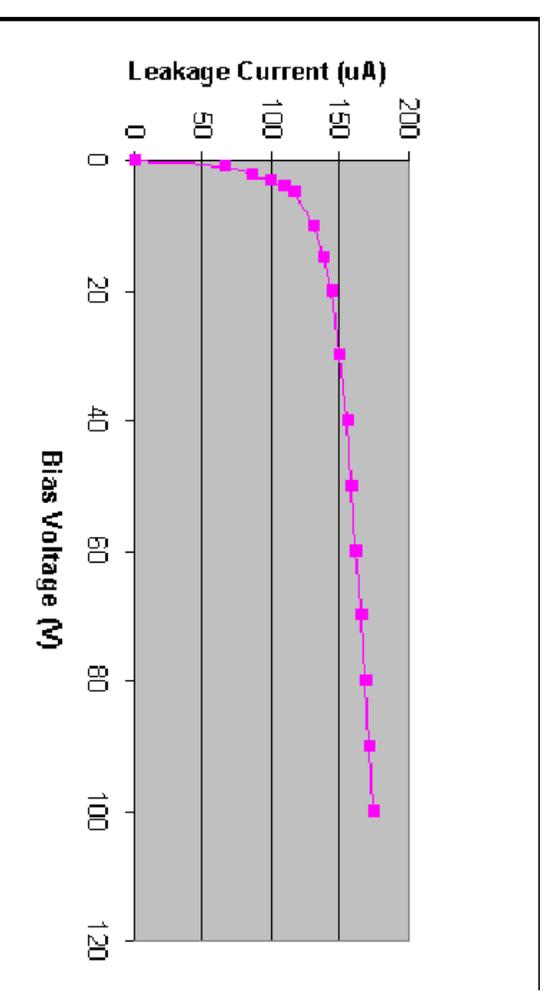


Irradiated module - Bias voltage dependence

Leakage current

It was hard to get an accurate measurement of the current.

At higher voltages it increased steadily, maybe due to heating.



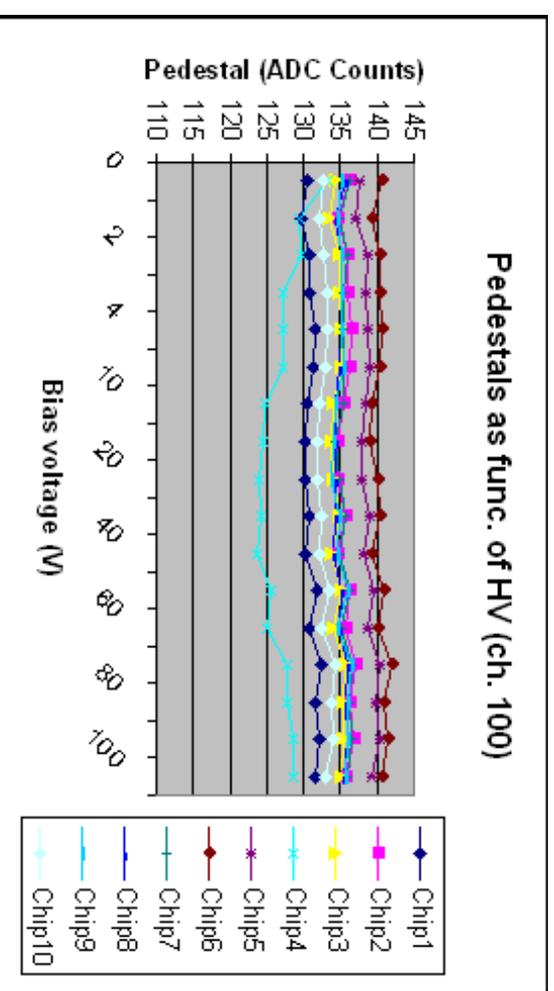


Pedestals

The pedestals are pretty stable as a function of the bias voltage.

Chip 4 has a bad region around channel 100.

Note the weird scale on the x-axis!





Noise performance

The bias voltage dependence of the noise is not as big as for the unirradiated module.

Chip 4 has a bad region around channel 100.

Note the weird scale on the x-axis!

