A readout system for microstrip silicon sensors (ALIBAVA)

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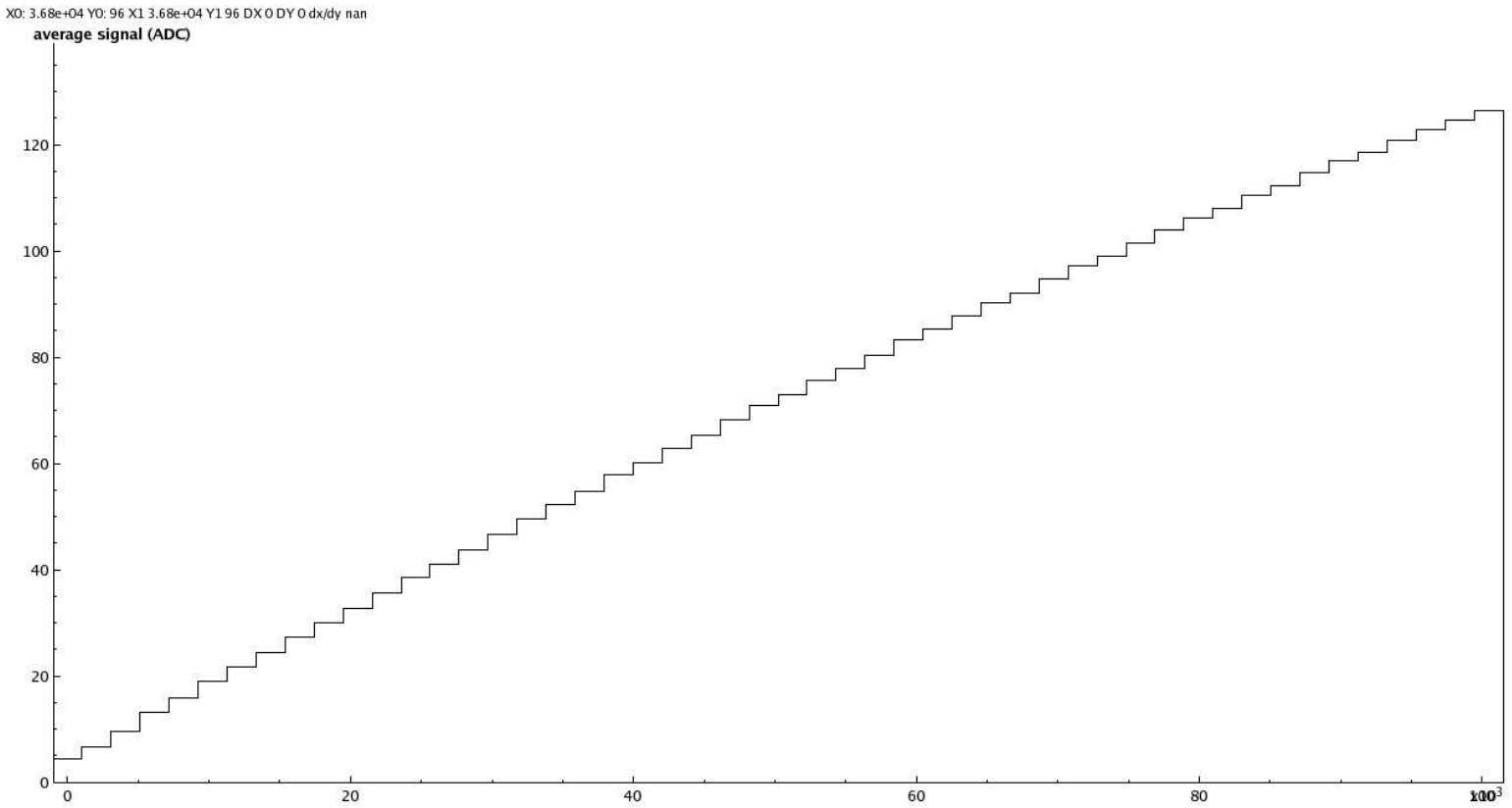
ALIBAVA Report, 15 February 2008, Valencia, Spain

OUTLINE

- RS Setup Test.
  - Unity gain.
  - 2.35 gain for Beetle 2.
- Conclusions and future work.

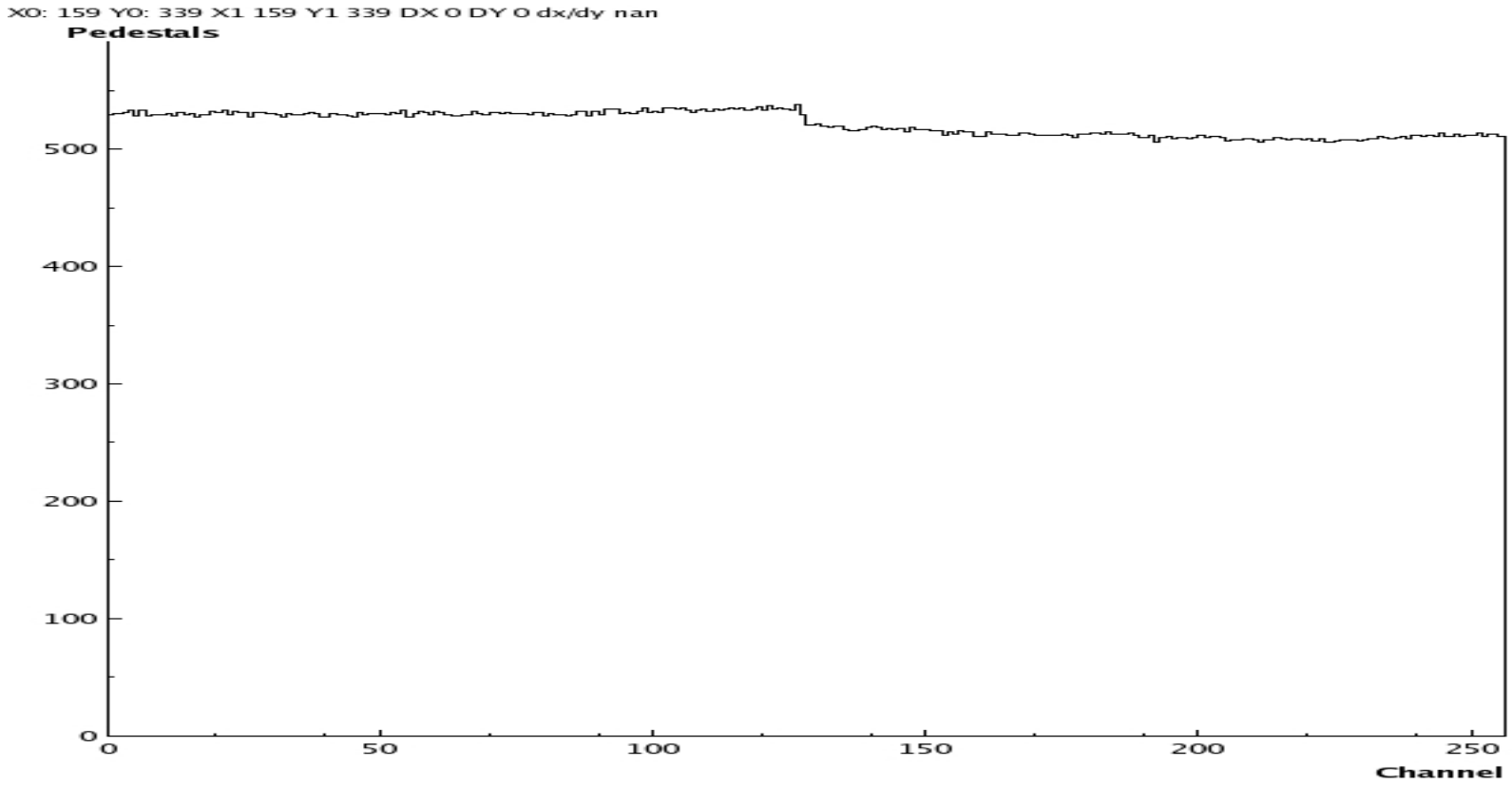
RS SETUP TEST

- RS Setup with **unity gain** in the signal conditioning block.
- Calibration curve for channel 161: corresponds to the Beetle connected to the detector.
- Detector fully depleted. No radioactive source.



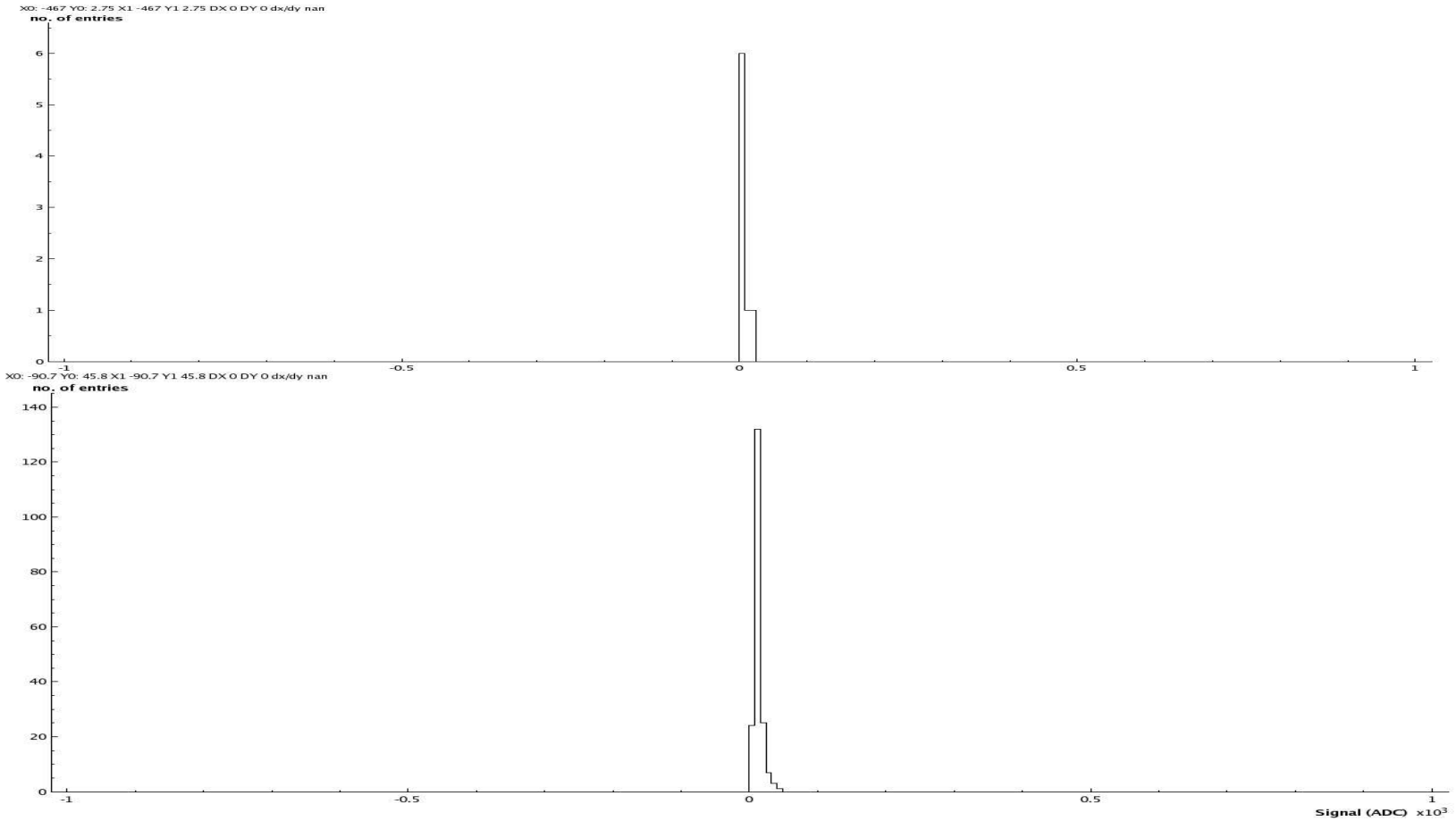
RS SETUP TEST

- RS Setup with **unity gain** in the signal conditioning block.
- Pedestals curve (10000 events) with detector connected and biased.
- Detector fully depleted. No radioactive source.
- Noise under 2 ADCs in both Beetle chips



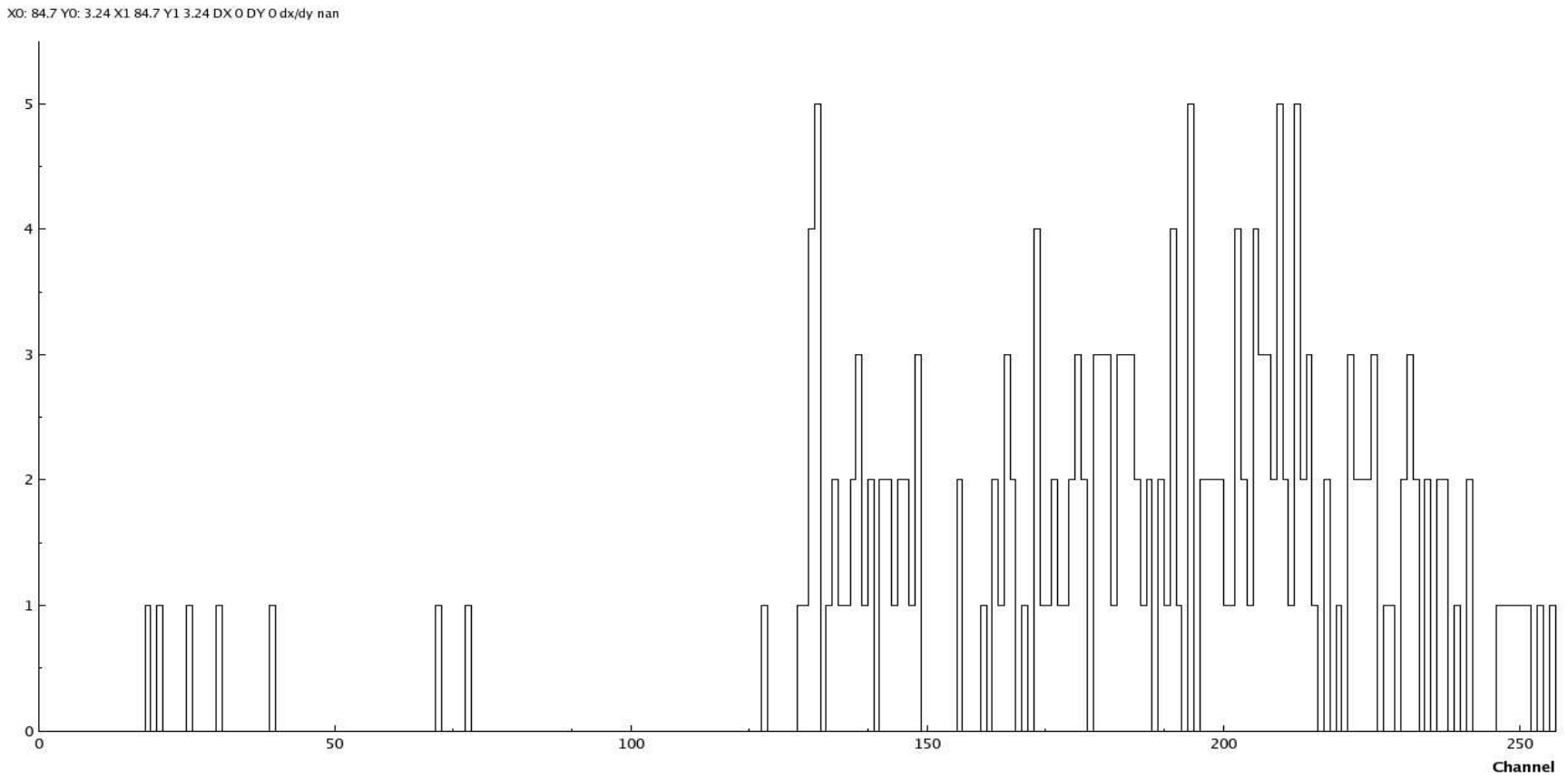
RS SETUP TEST

- RS Setup with **unity gain** in the signal conditioning block.
- Signals over noise for Beetle chip 1 (not connected) and Beetle chip 2 (connected). 10000 events.
- Detector fully depleted. Radioactive source.



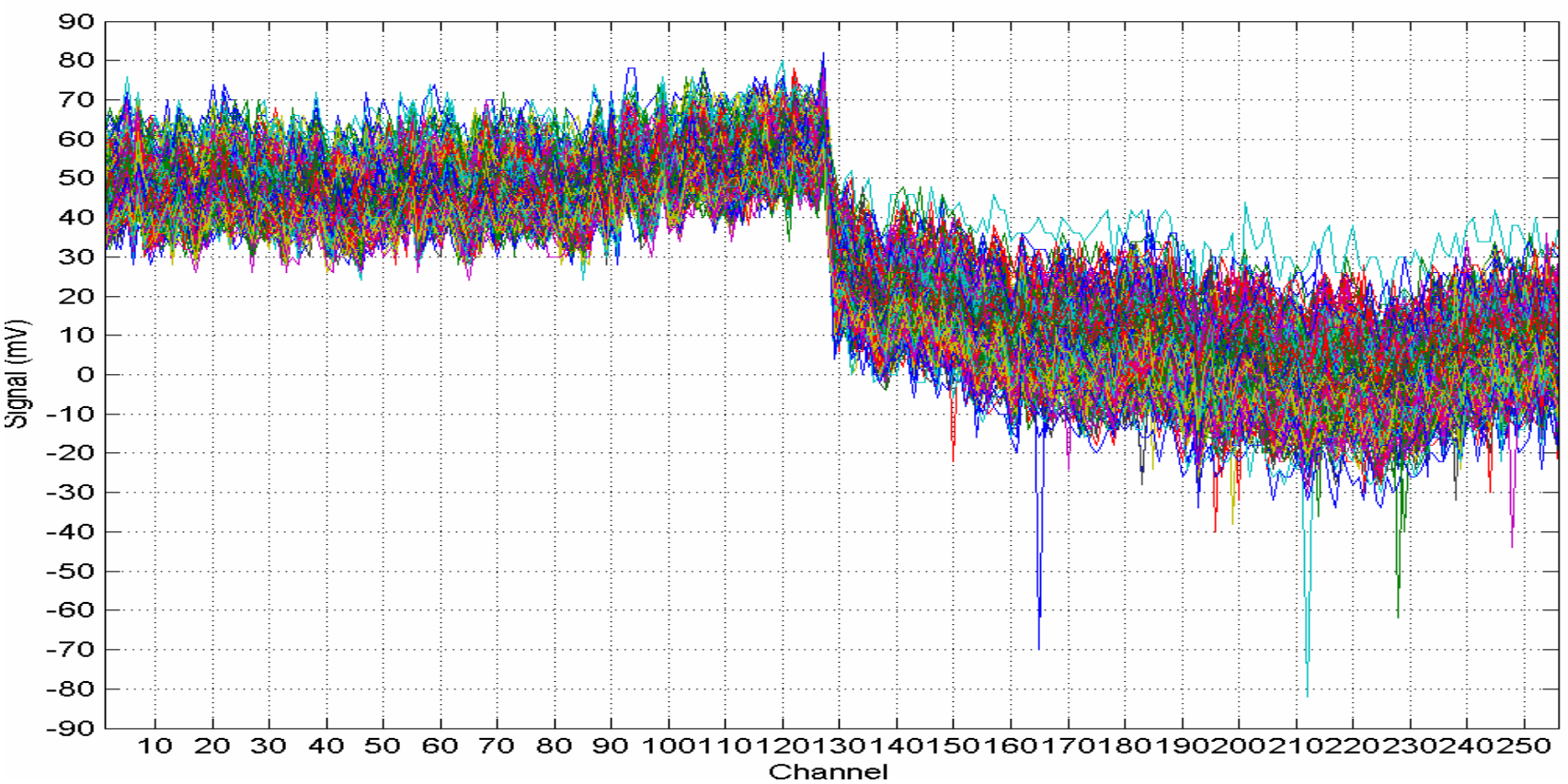
RS SETUP TEST

- RS Setup with **unity gain** in the signal conditioning block.
- Hitmap (corresponding to signals over noise) for Beetle chip 1 (not connected) and Beetle chip 2 (connected). 10000 events.
- Detector fully depleted. Radioactive source.



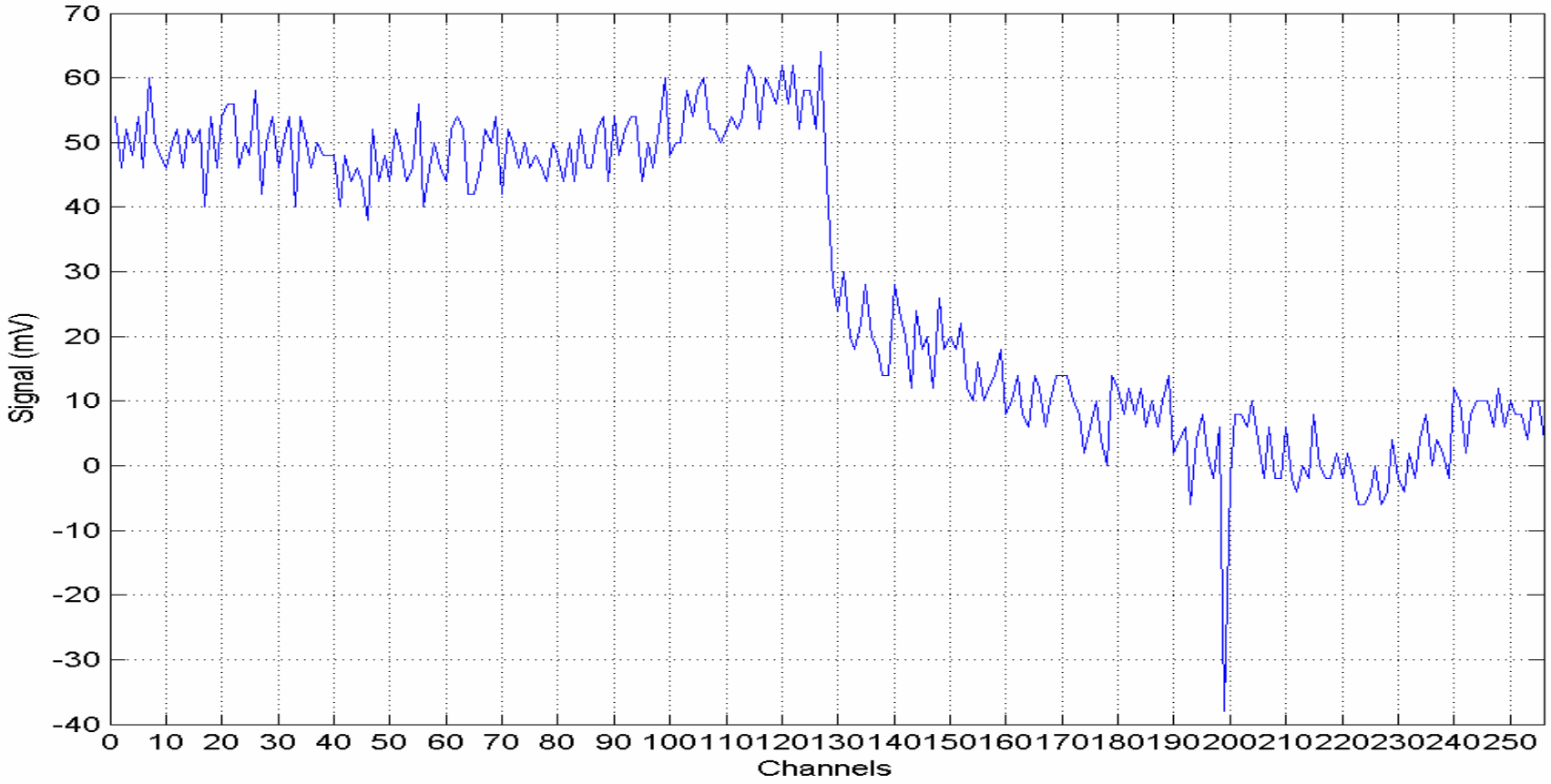
RS SETUP TEST

- RS Setup with **unity gain** in the signal conditioning block.
- Digitized signals for Beetle chip 1 (not connected) and Beetle chip 2 (connected). 1000 events.
- Detector fully depleted. Radioactive source.



RS SETUP TEST

- RS Setup with **unity gain** in the signal conditioning block.
- Digitized signal for Beetle chip 1 (not connected) and Beetle chip 2 (connected). 1 of 1000 events.
- Detector fully depleted. Radioactive source.



RS SETUP TEST

- RS Setup with **2.35 gain** in the signal conditioning block for Beetle 2.
- Calibration curve for channel 161: corresponds to the Beetle connected to the detector.
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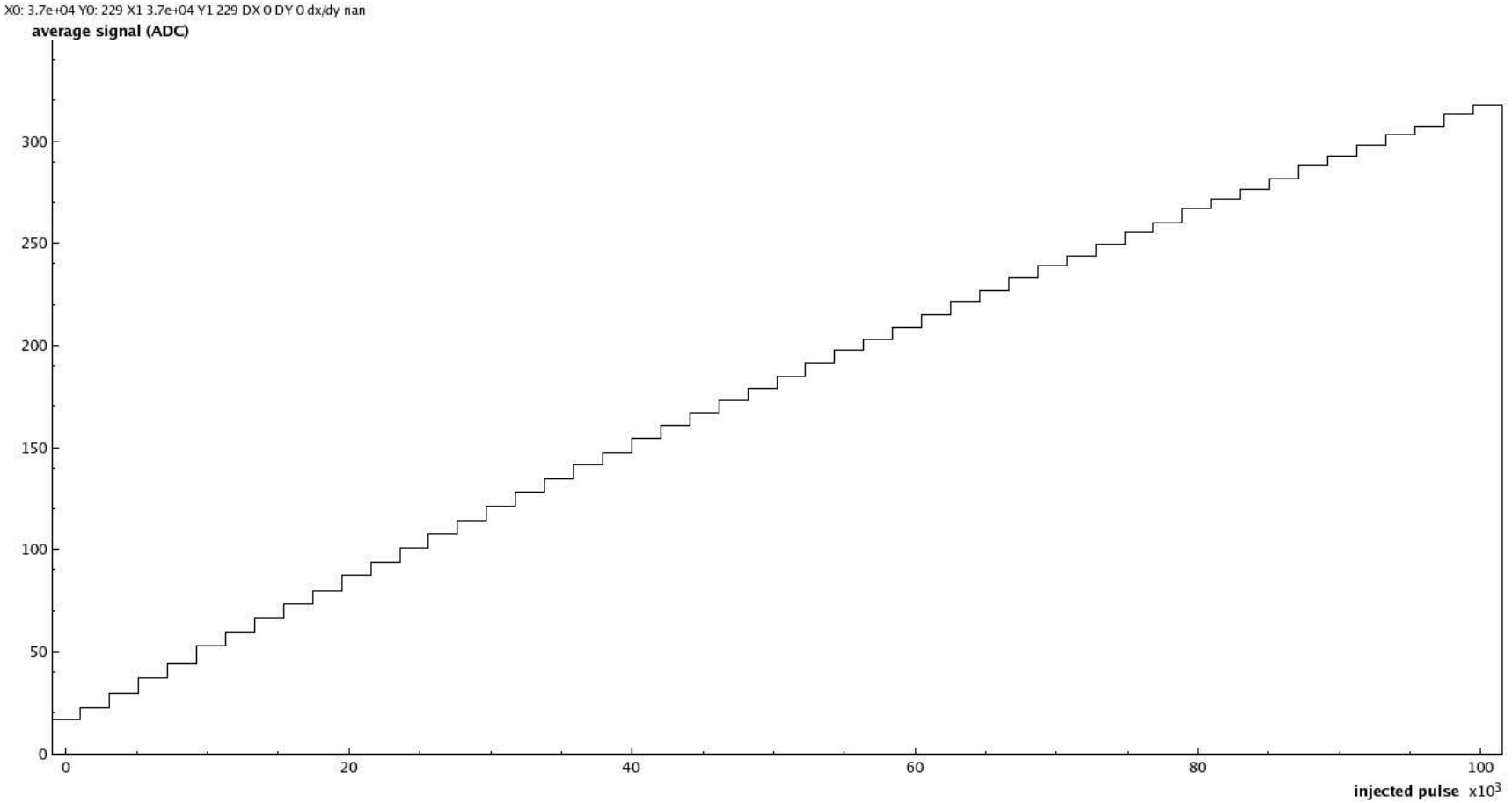
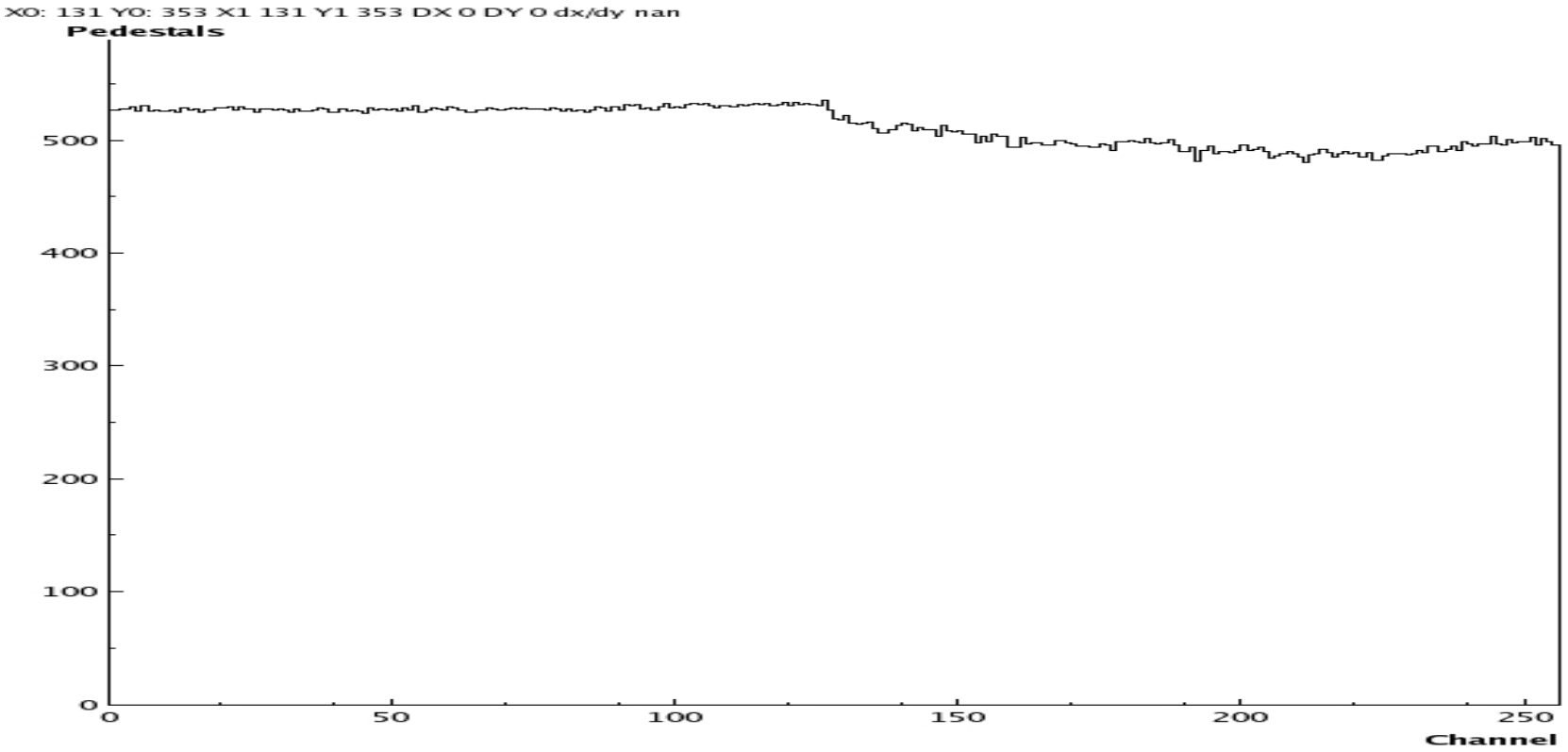


RS SETUP TEST

- RS Setup with **2.35 gain** in the signal conditioning block for Beetle 2.
- Pedestals curve (10000 events) with detector connected and biased.
- Detector fully depleted. No radioactive source.
- Noise under 2 ADCs in Beetle1 (not connected and unity gain), Beetle2 (connected and 2.35 gain) under 3 ADCs.



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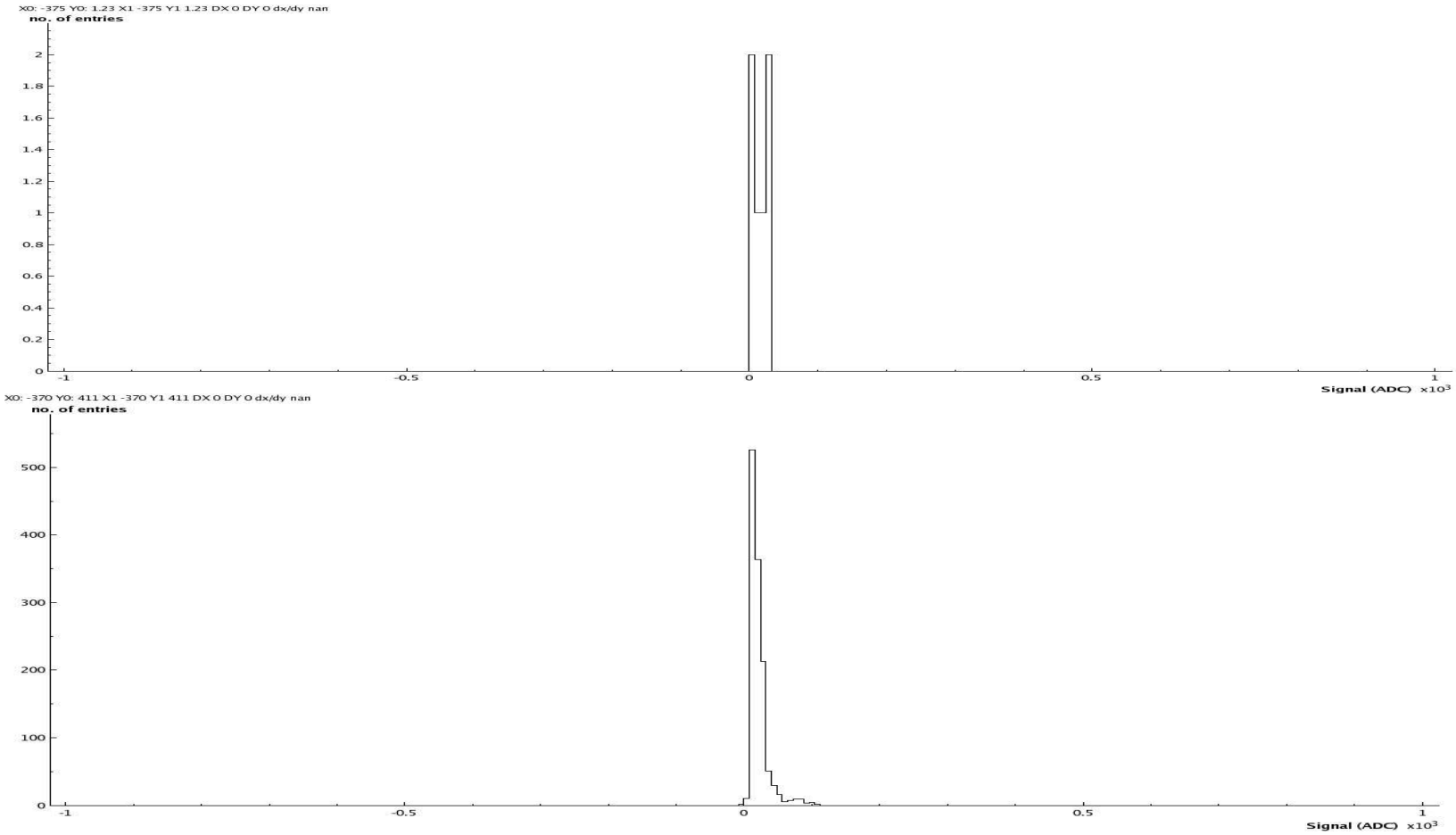

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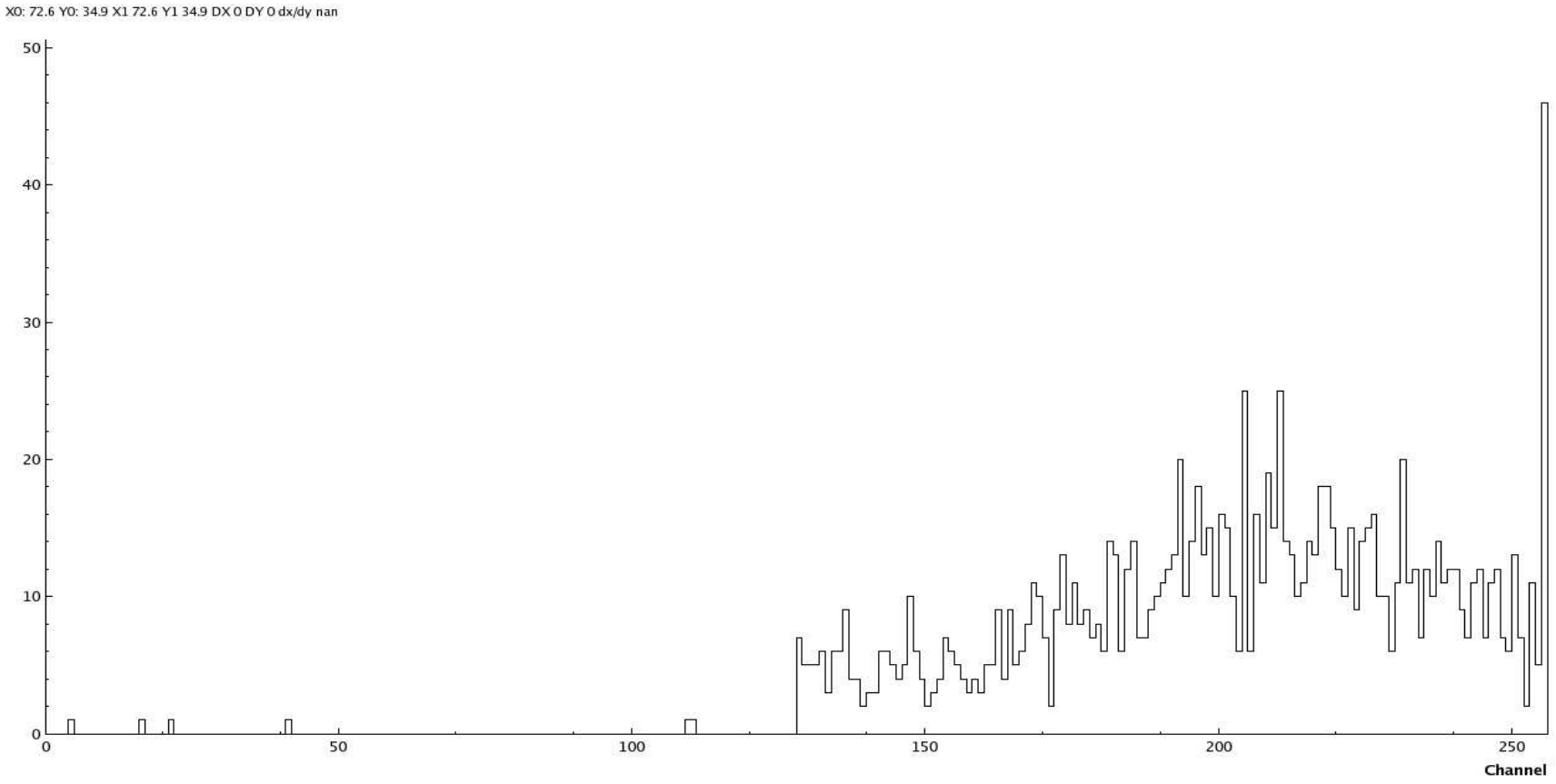

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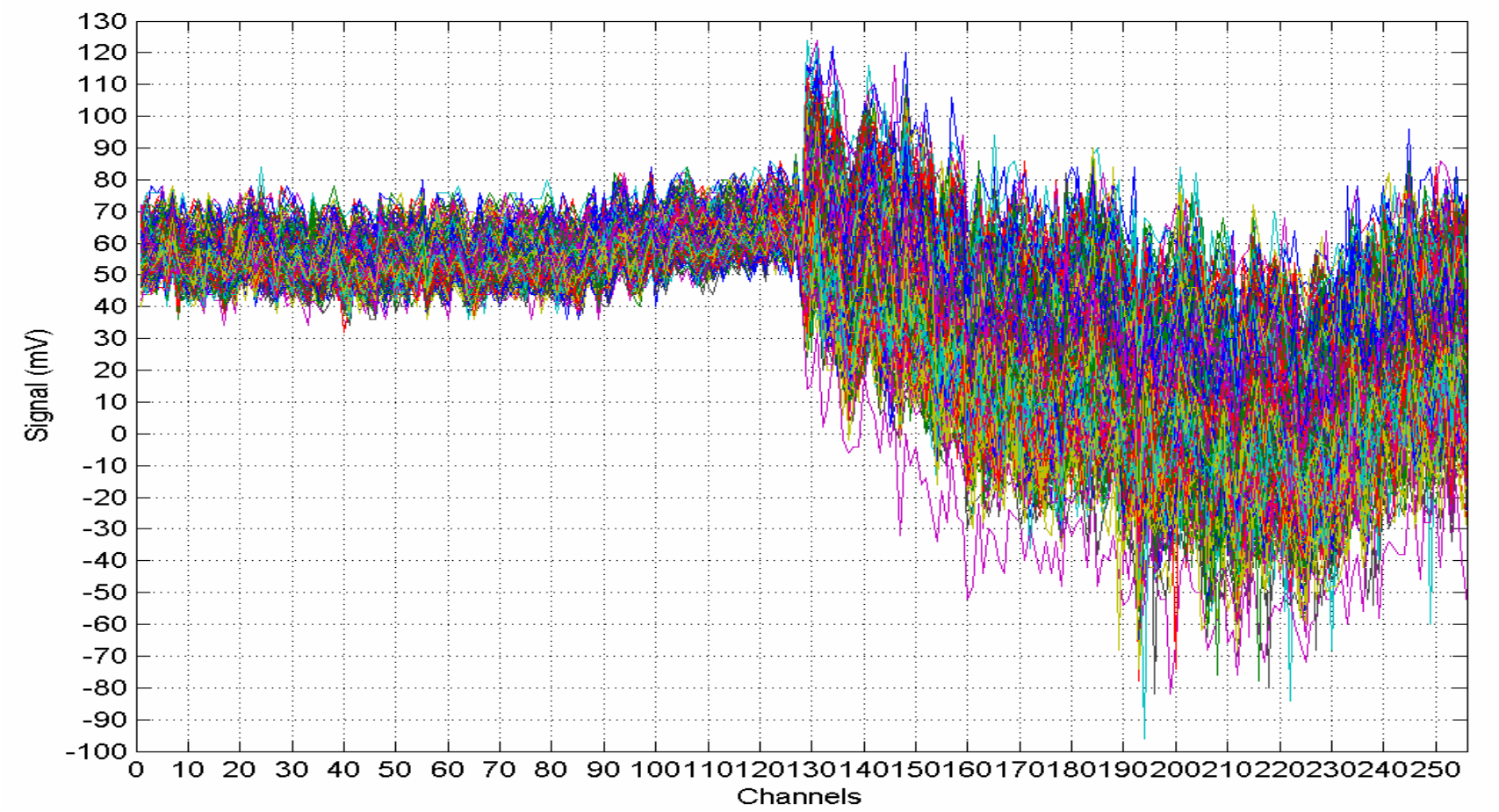

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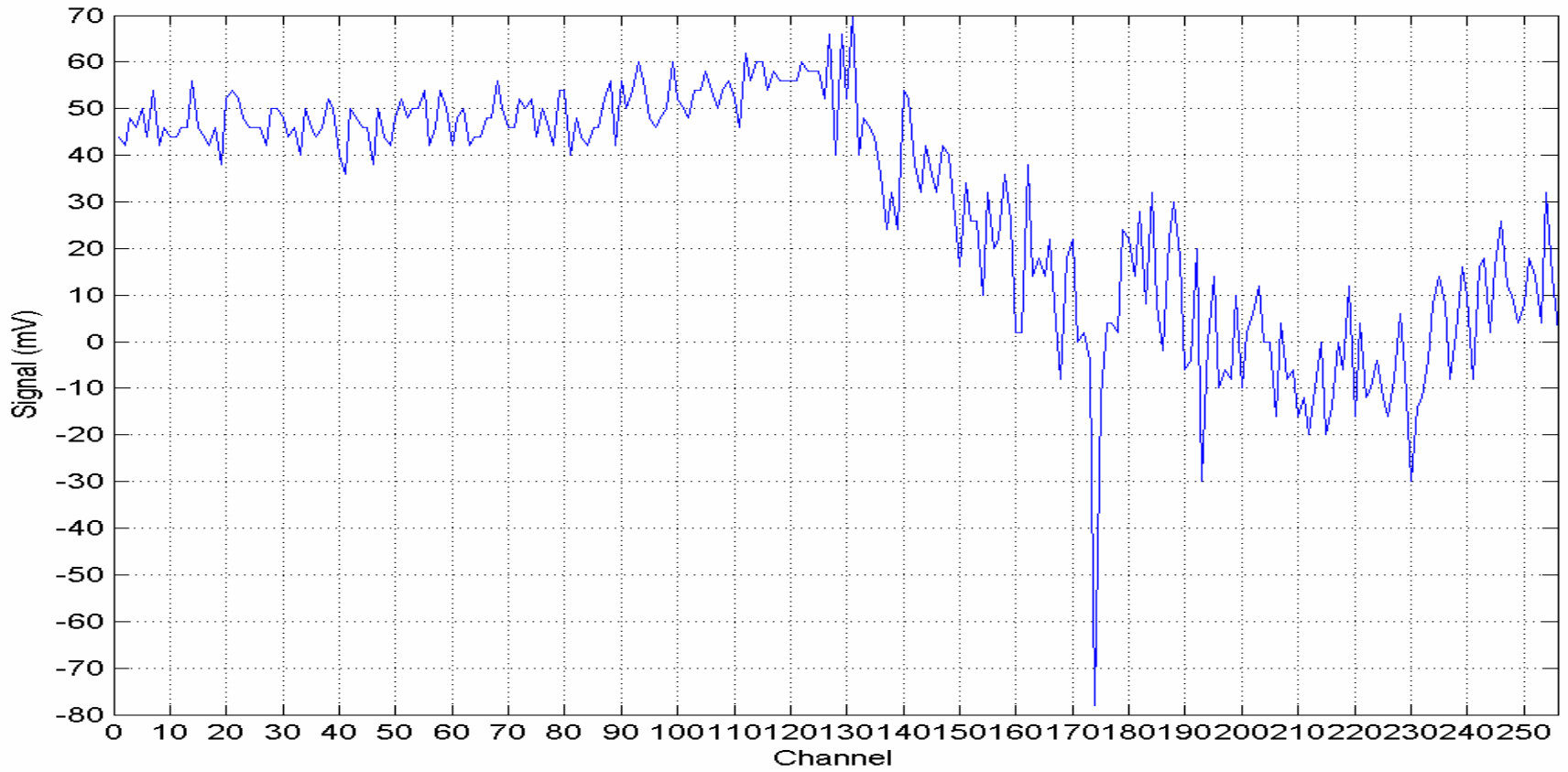

CONCLUSIONS & FUTURE WORK

- Currently, we have the ALIBAVA system finished and fully tested (more measurements would be needed).
- Maybe, it would be better to keep unity gain for noise.
- It could be implemented a “software gain” just for acquisition figures in the software if required.
- Some minor changes in the custom software.
- The custom software Windows version release is almost finished.
- ALIBAVA upgrade for a testbeam (after Barcelona meeting).

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