Self-trigger algorithm
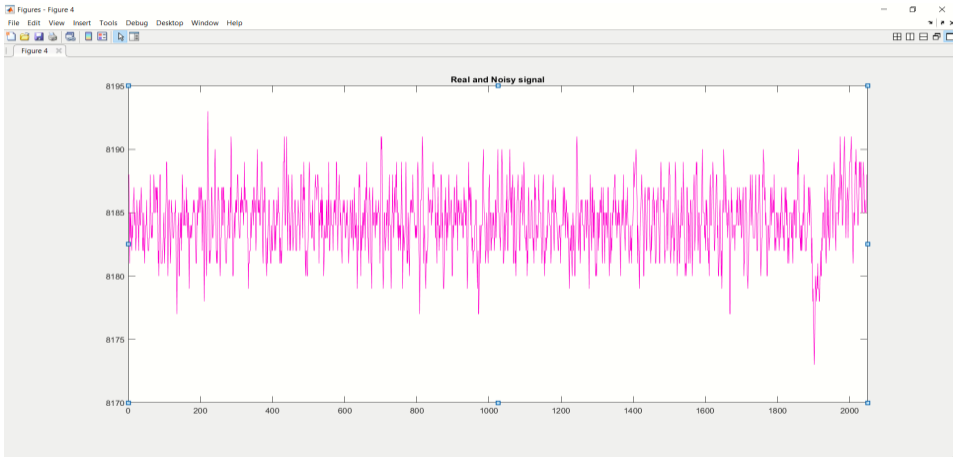## Signals, Detection algorithm, Migen simulation, VHDL simulation and future work

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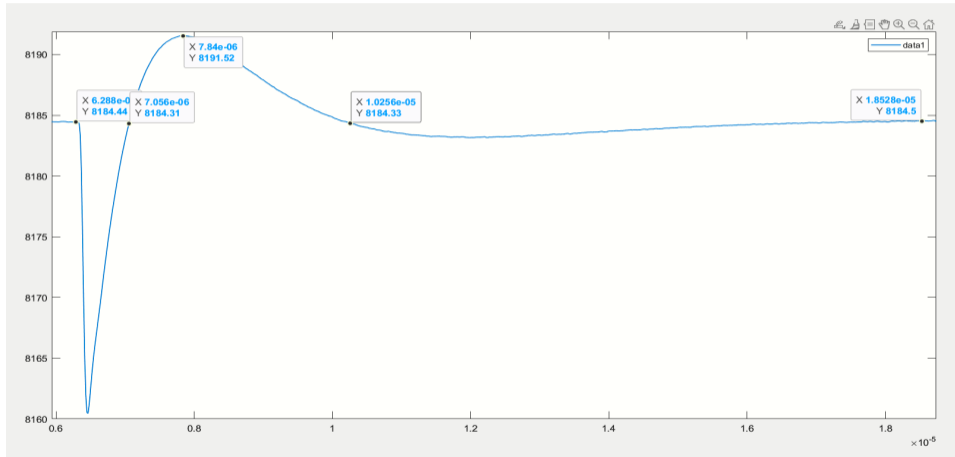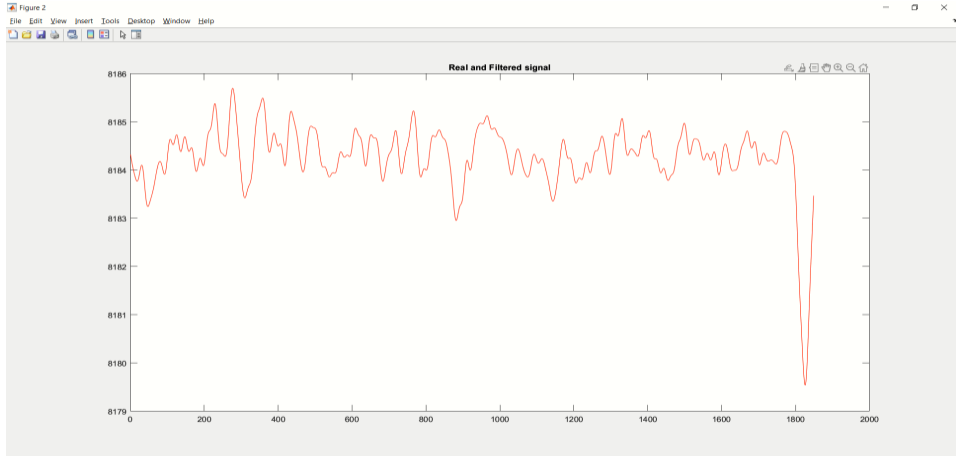
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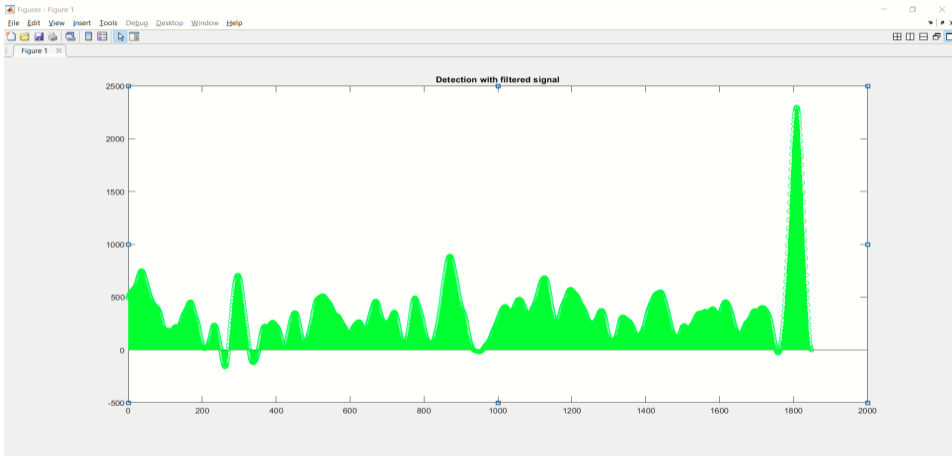# Matlab simulation (1/4): Real signal

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Matlab simulation (2/4): Typical event signal

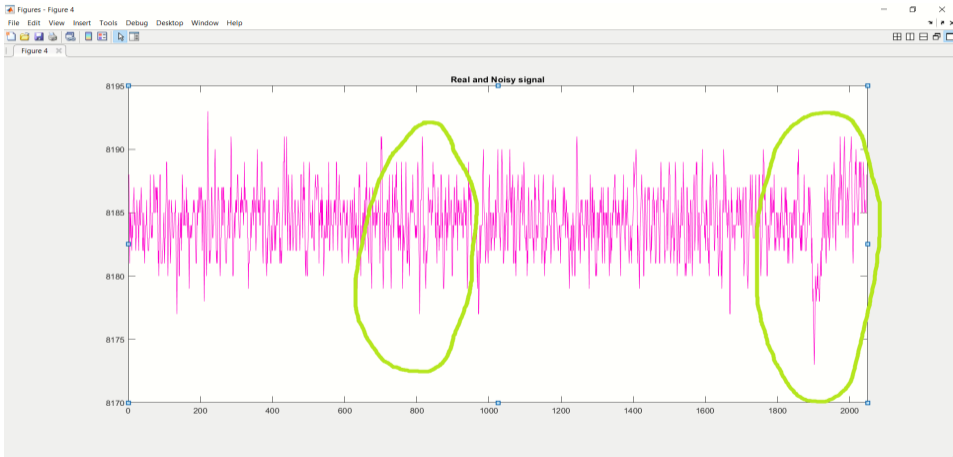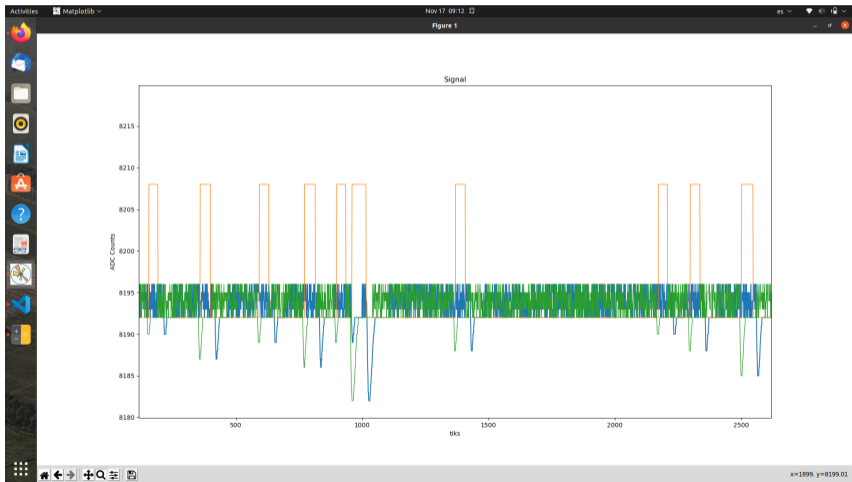# Matlab simulation (3/4): Filtered signal
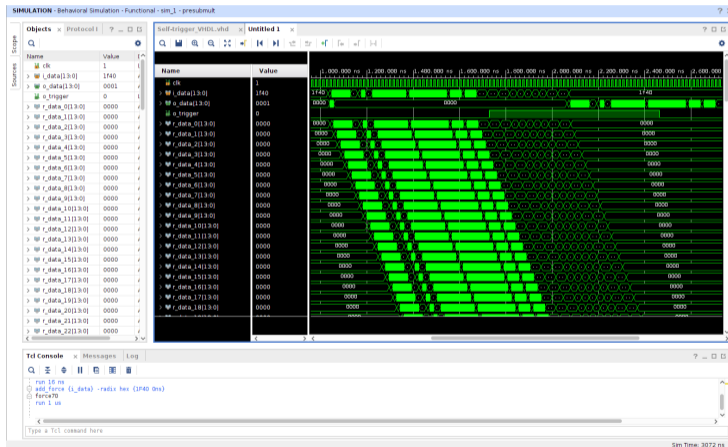
Matlab simulation (4/4): Events detection

Matlab simulation (1/4): Real signal

Migen simulation

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VHDL simulation

Conclusions

- ► Initial implementation of the algorithm in Matlab shows its potential.
- ► Migen (HDL) simulation of the algorithm, reassures the results obtained at the beginning using Matlab.
- ► Vivado simulation of the algorithm shows good results as well. This reaffirms the good potential of the future implementation of the Self-trigger algorithm.

What is next

▶ Do more tests on the self-trigger algorithm, and use more data coming from CERN or Milano.

▶ Integrate the algorithm in Jamieson's project. (Long task)

▶ Continue to study and improve the algorithm. Because its highly dependant on the signal mean computing, during a 320 samples window.

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DEEP UNDERGROUND
NEUTRINO EXPERIMENT