Rubidium clock drift correction for HK timing system

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- DAQ software installation on lpnlp3
- Cs clock

DAQ software installation on lpnlp3

ClockDAQ on lpnlp3

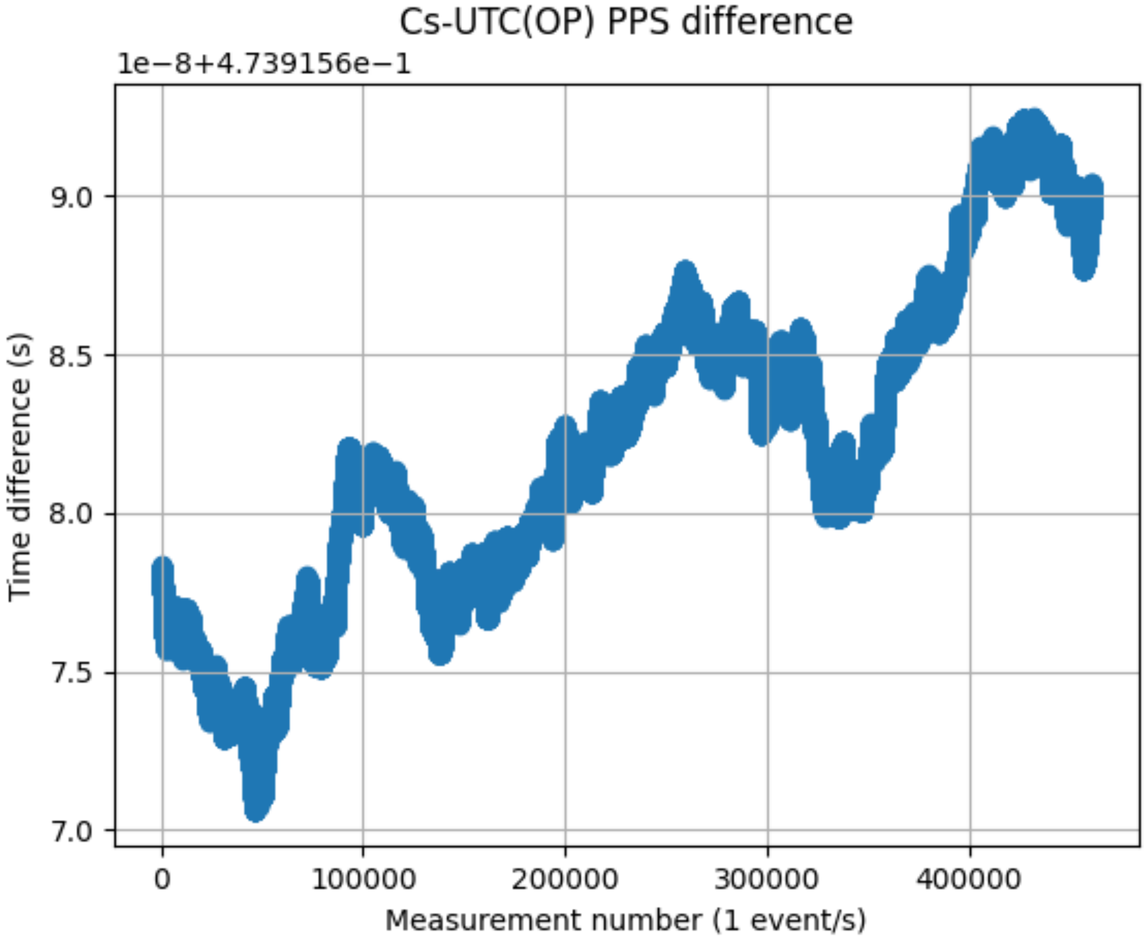
- The code under ~/Documents/daq had significantly diverged from master: this should be avoided!!
- The new correction frontends were pushed to master and are also now in ~/Documents/daq
- However, the srs frontend and instrument was refactored 2 months ago and I am not sure how to make it work anymore (would like the correction frontend to modify the ODB of SRS and that consequently a command to change the SF parameter of the clock is sent). I need it for the tests of SF correction with the Rb.

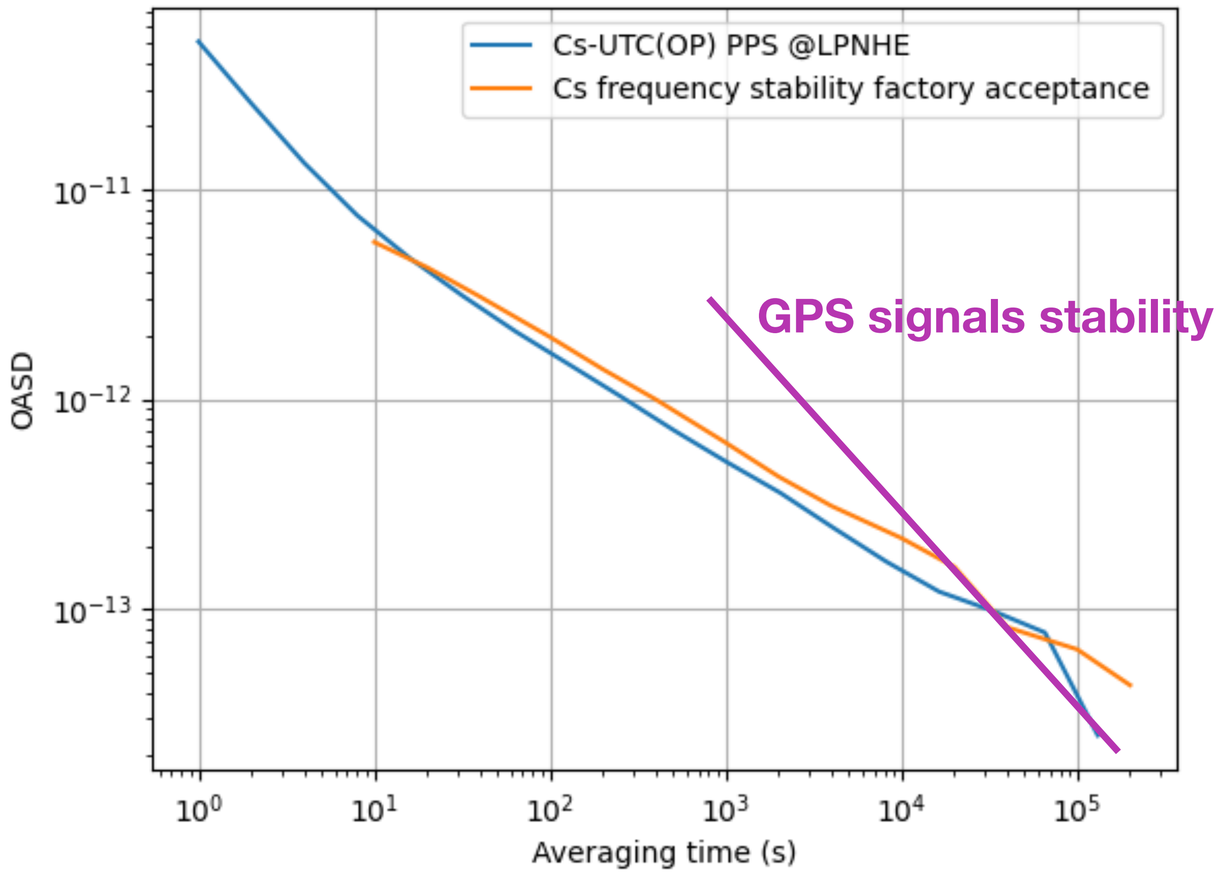
First results with Cs

Cs clock

- Was not using the correct output for the previous results… The PPS outputs are:
  - OUT3 TTL (front of the clock)
  - OUT4 TTL (back of the clock, left column)
- This time, used correct PPS output vs UTC(OP) measured by counter with Cs 10MHz as external reference.

First tests with the Cs





Drifted by ~20 ns in 5 days: would still need a correction.

Would use at least ~50000s of GPS data for correction (~50 measurements).

Conclusion

- Two possible plans:
    1. Test correction method with the Cs clock
    2. Continue testing of SF correction with the Rb clock
- Difficult to do in parallel as it would require 2 receivers and 2 PPS UTC(OP)
- The setup is ready for number 2, would just require ~2-4 weeks, if I manage to send commands to the Rb to change SF through the srs frontend.
- Should not be difficult to change the setup for number 1 but it would require a longer data-taking (~1-2 months). Maybe need to fix the offset of PPS wrt UTC(OP).