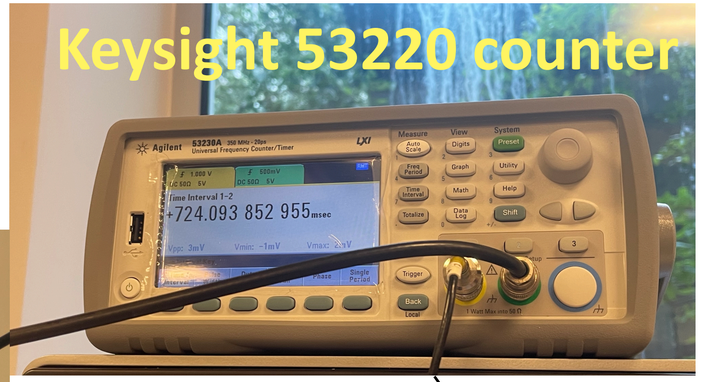
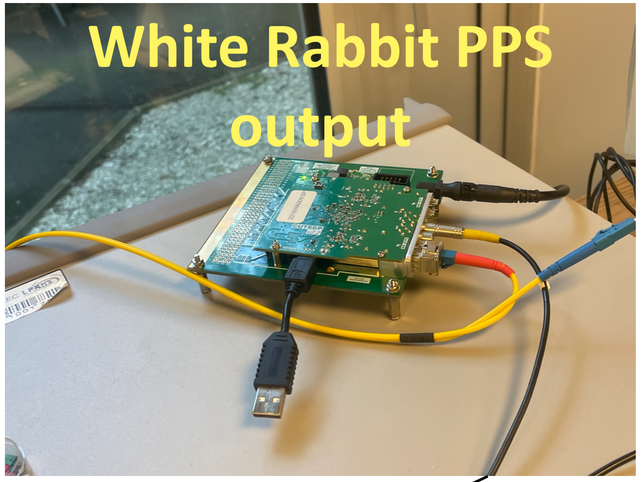
First use of the pps counter

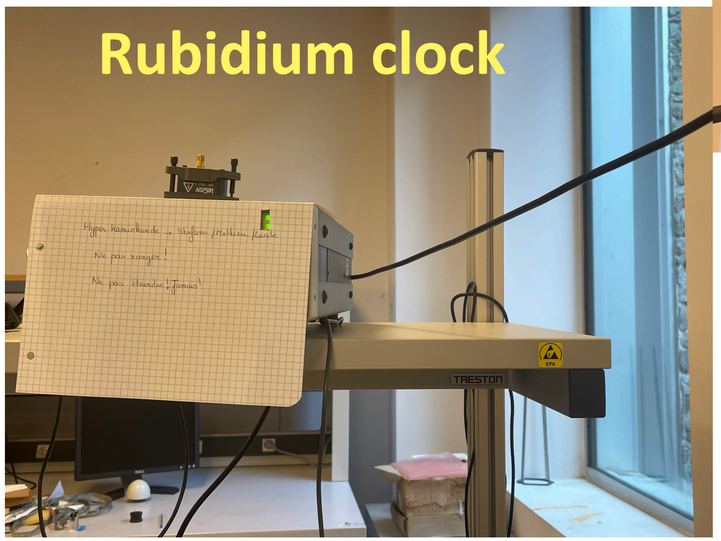
Rubidium Clock (PPS output)
White Rabbit PPS from Syrte
Keysight 53220 counter

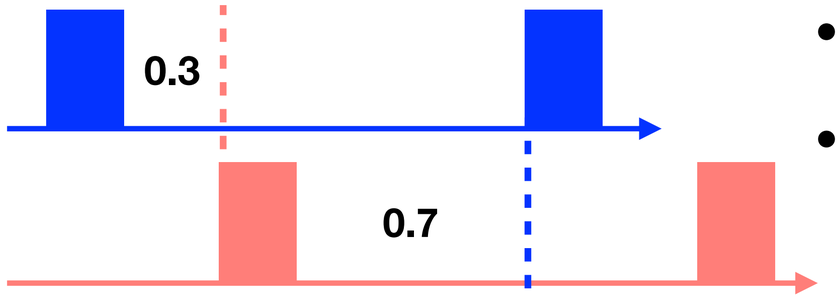
First use of the pps counter

Ethernet connection between instruments
Counter -> norm scpi
Use of libraries written by Vincent
Python scripts



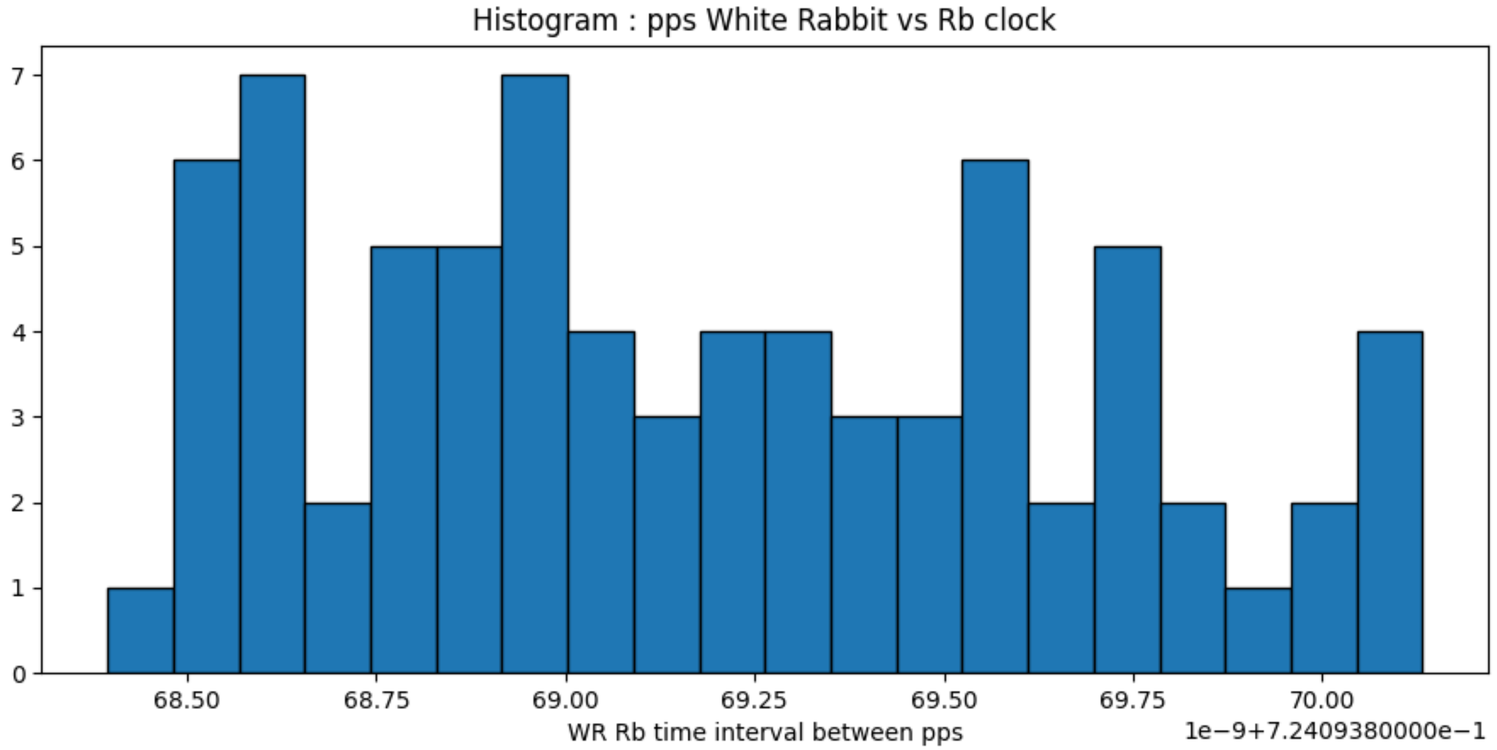






- Counter takes WR as reference (trigger) —> does not matter if we just want to look at the drift of the time difference, the other way around would give the complement value to 1s
- Counter advertises a 20 ps resolution but gives more digits, when plugged with same two outputs—> difference of ~100 ps
- Give difference input 1 - input 2, otherwise sign changes

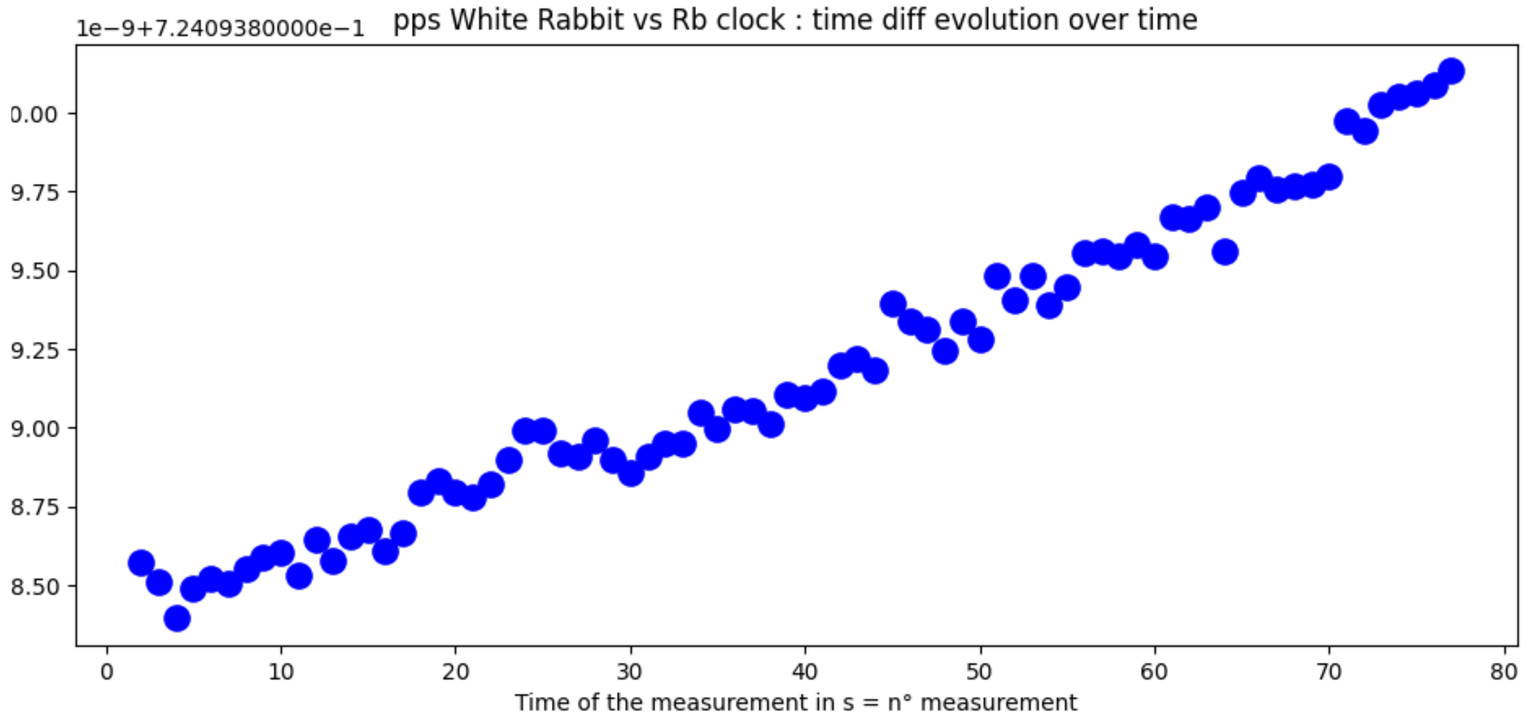
First use of the pps counter



Histogram here gives time differences between 2 pps
—> not very important (no calibration of WR)
—> we want to see drift over time -> Allan Standard Deviation (for next time ;))

Length of the measurement :
77s = 1mn17s

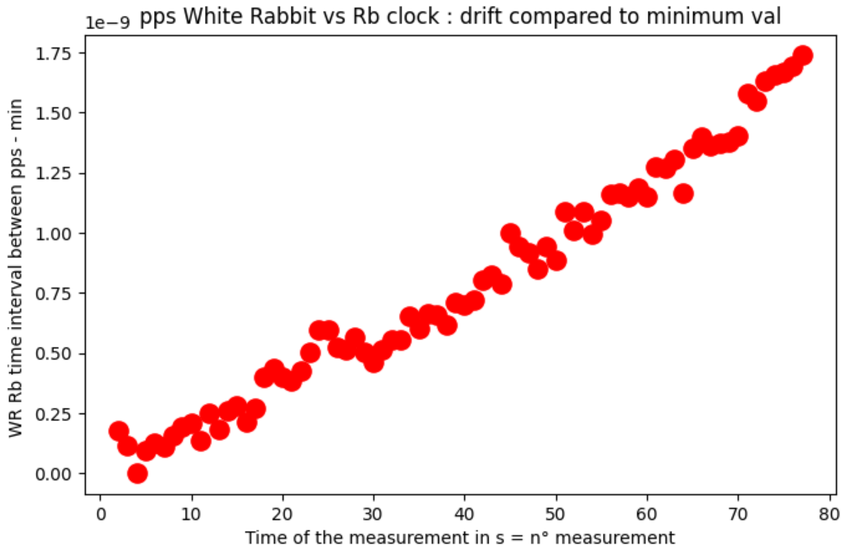
First use of the pps counter

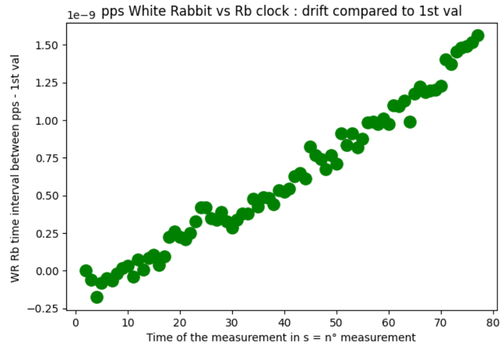


Time difference vs n° of the measurement (equivalent to time in s)

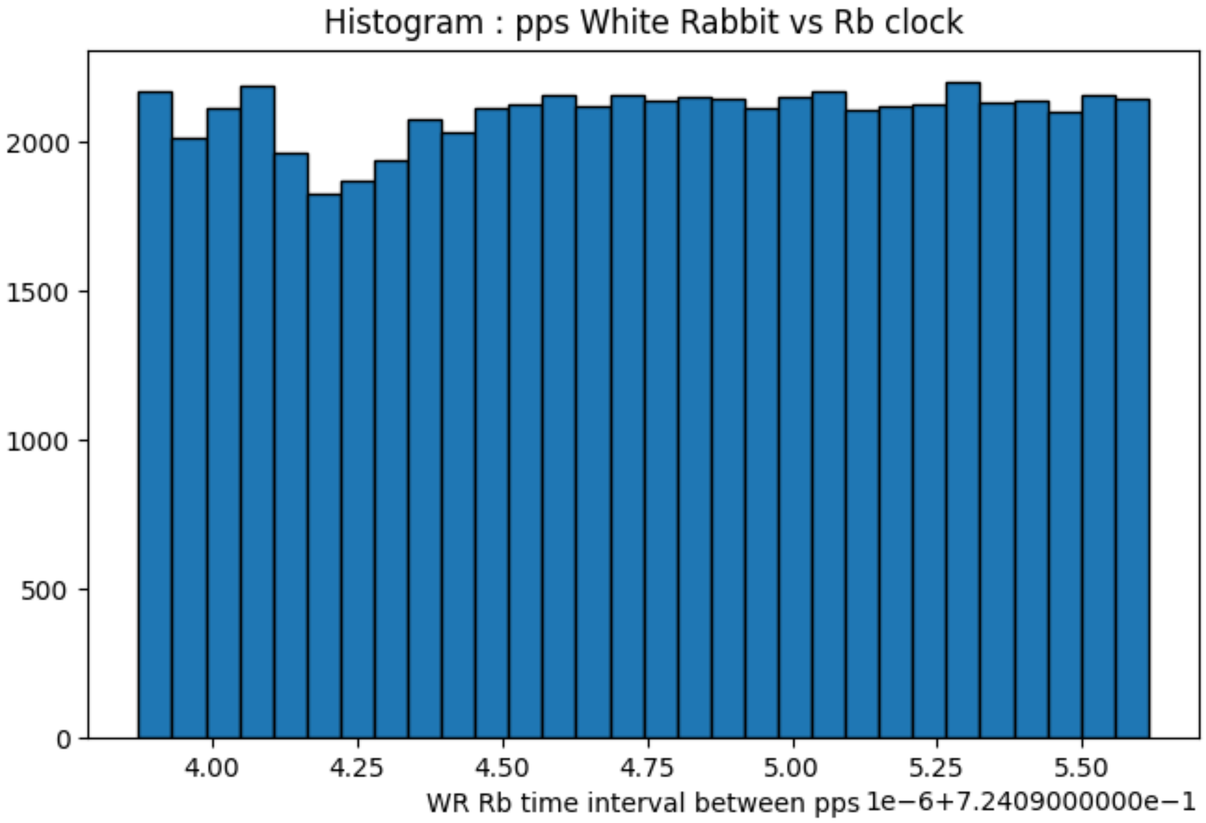
Drift ~2ns in 77 s

—> 26ps /s





First use of the pps counter



Histogram here gives time differences between 2 pps

—> value not very important (no calibration of WR)

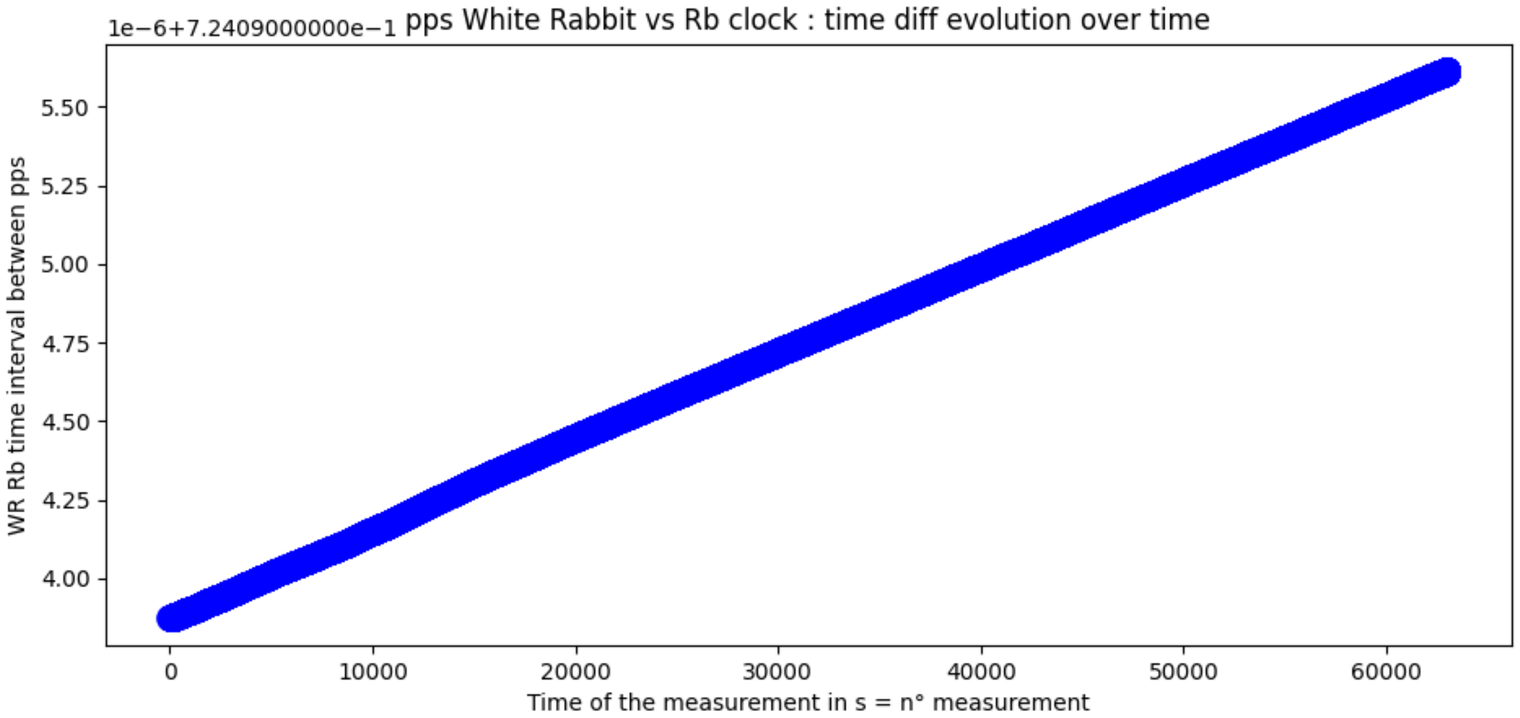
—> we want to see drift over time

-> Allan Standard Deviation (for next time ;))

Length of the measurement :

62997s = 17h30mn

First use of the pps counter



Time difference vs n° of the measurement (equivalent to time in s)

Drift ~1.75µs in 17h30mn

—> 27 ps/s similar to shorter measurement