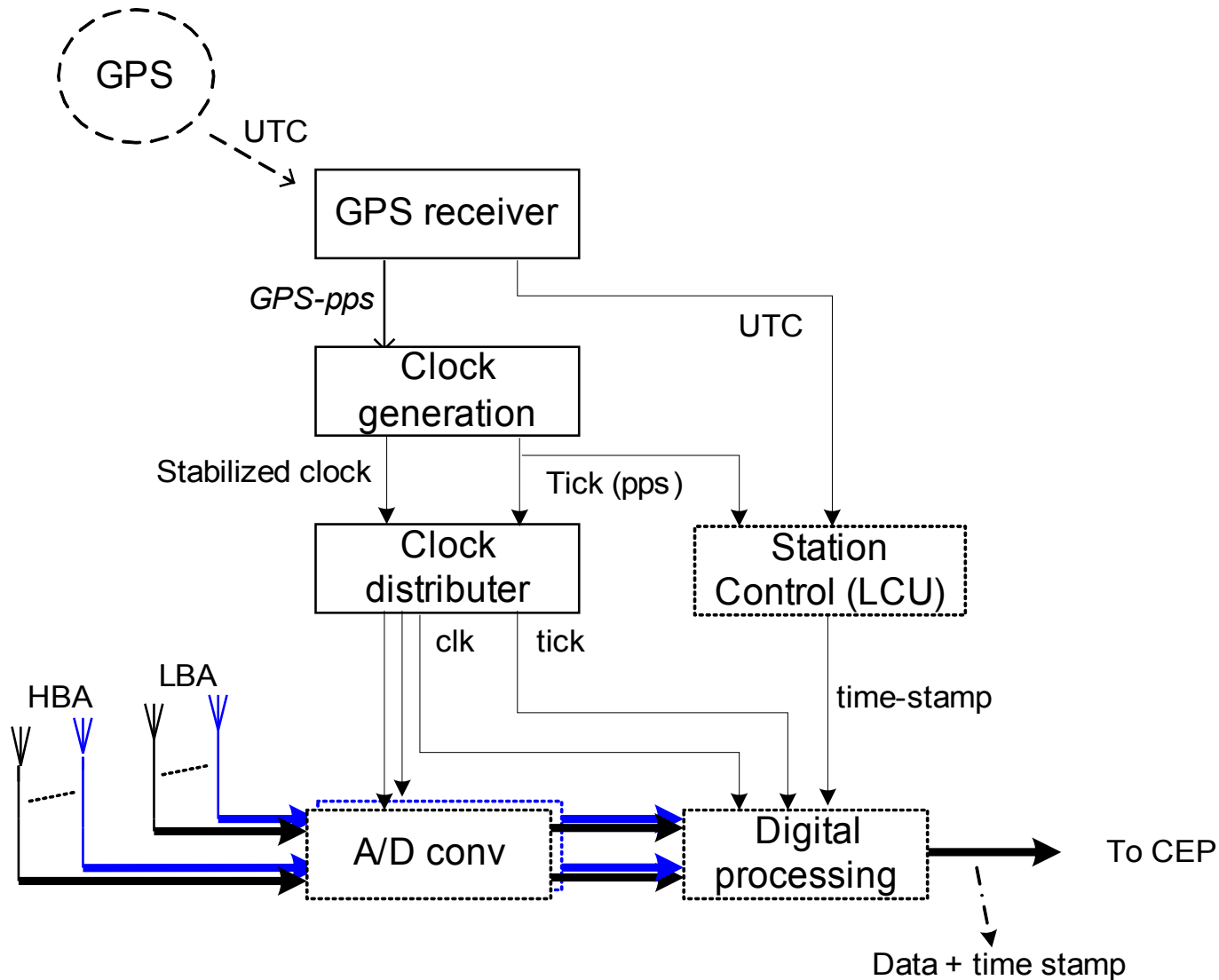




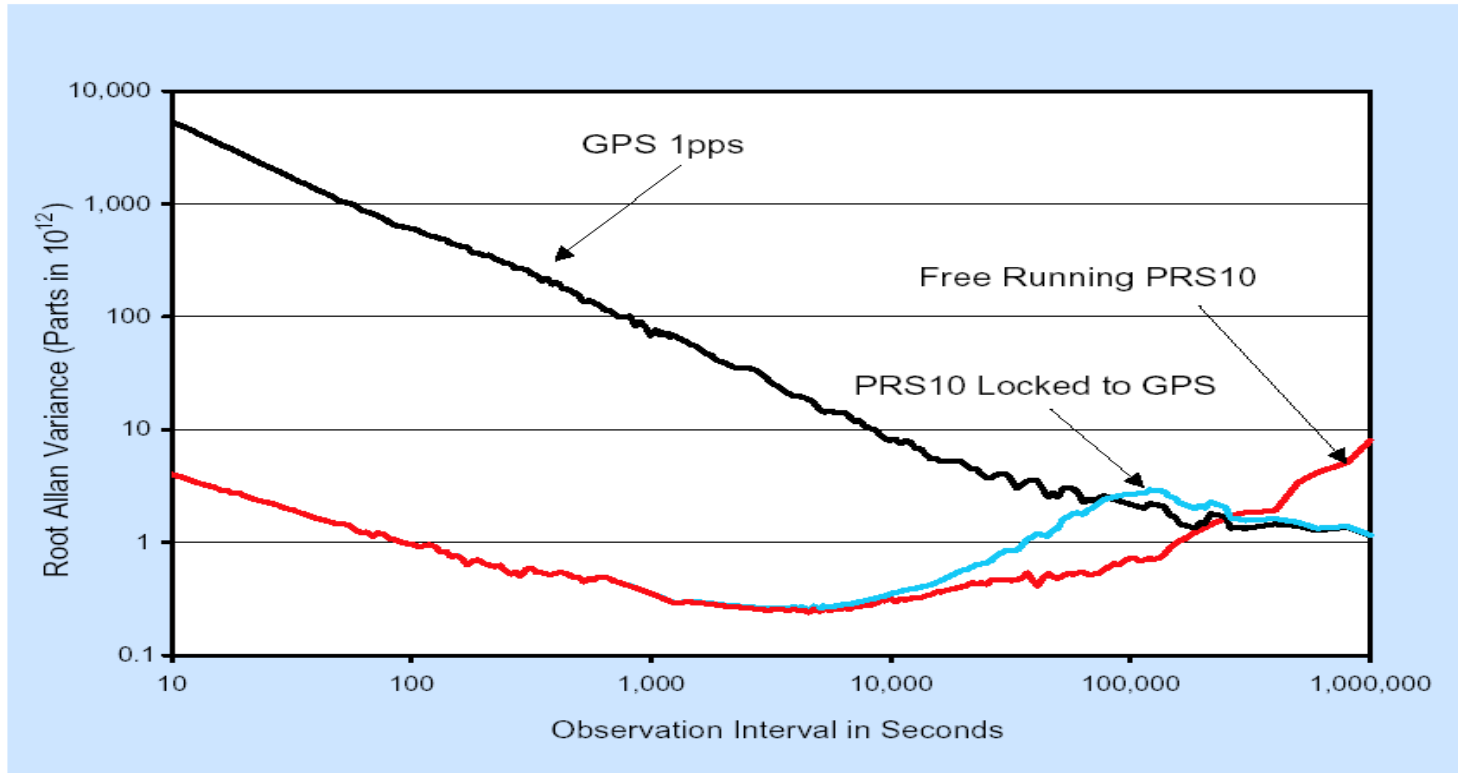
Station Clock Distribution

Status Update

Station Clock Distribution



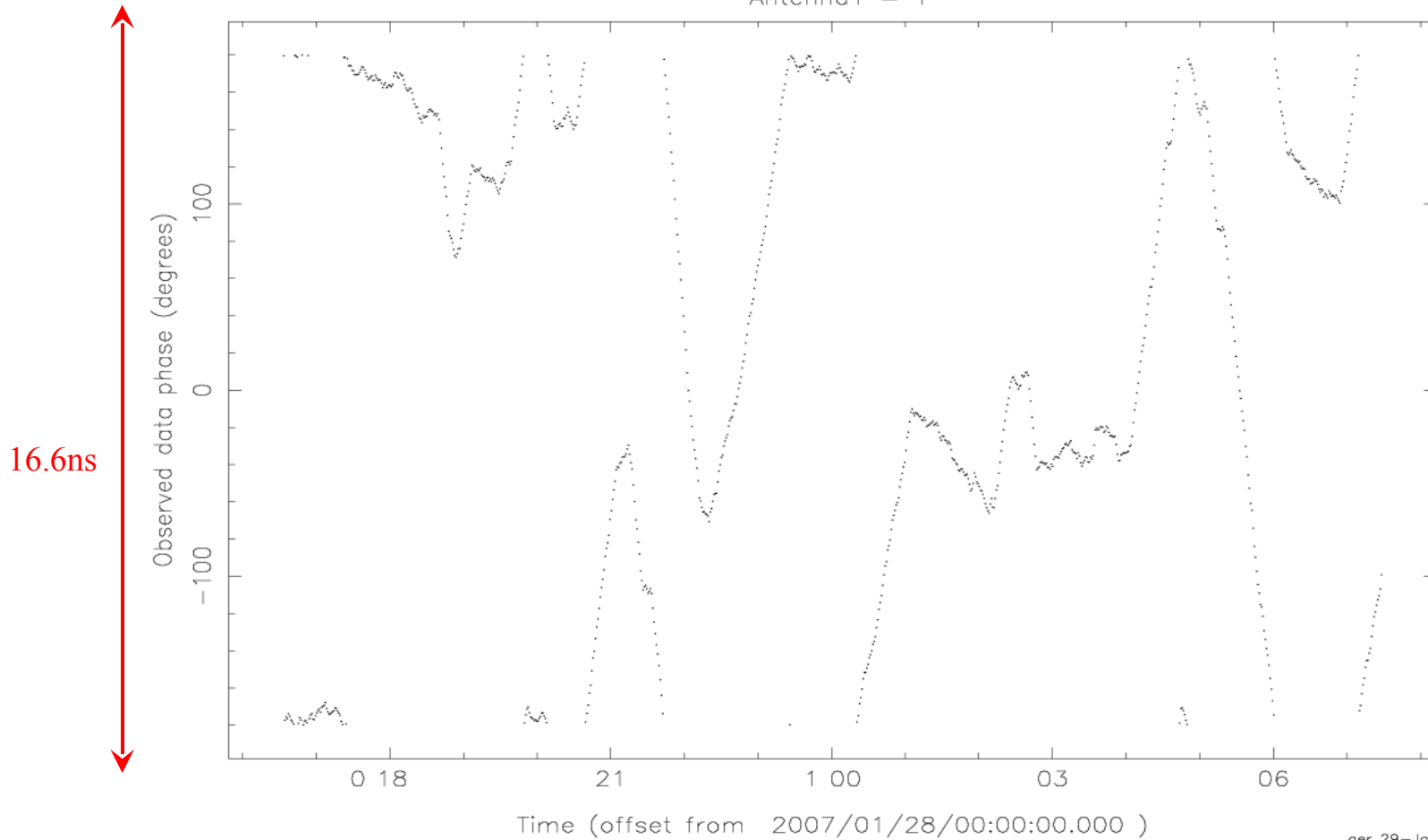
Function of GPS locking



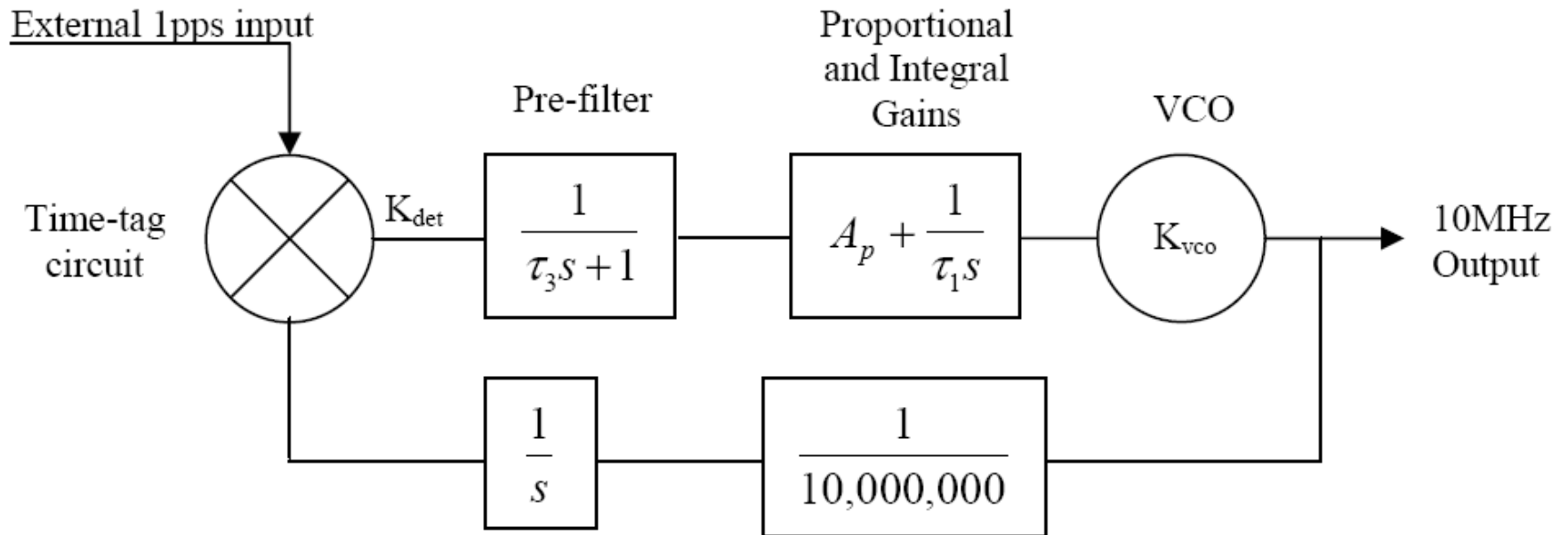
PRS10 Allan variance plot

Problem: Clock Drift

sp64_4/ger/LOFAR/CS1/data/28jan07-L1068/L2007_01068_SB4-5.MS Spectral Window: 2 Polarization: 1 F
Antenna1 = 1

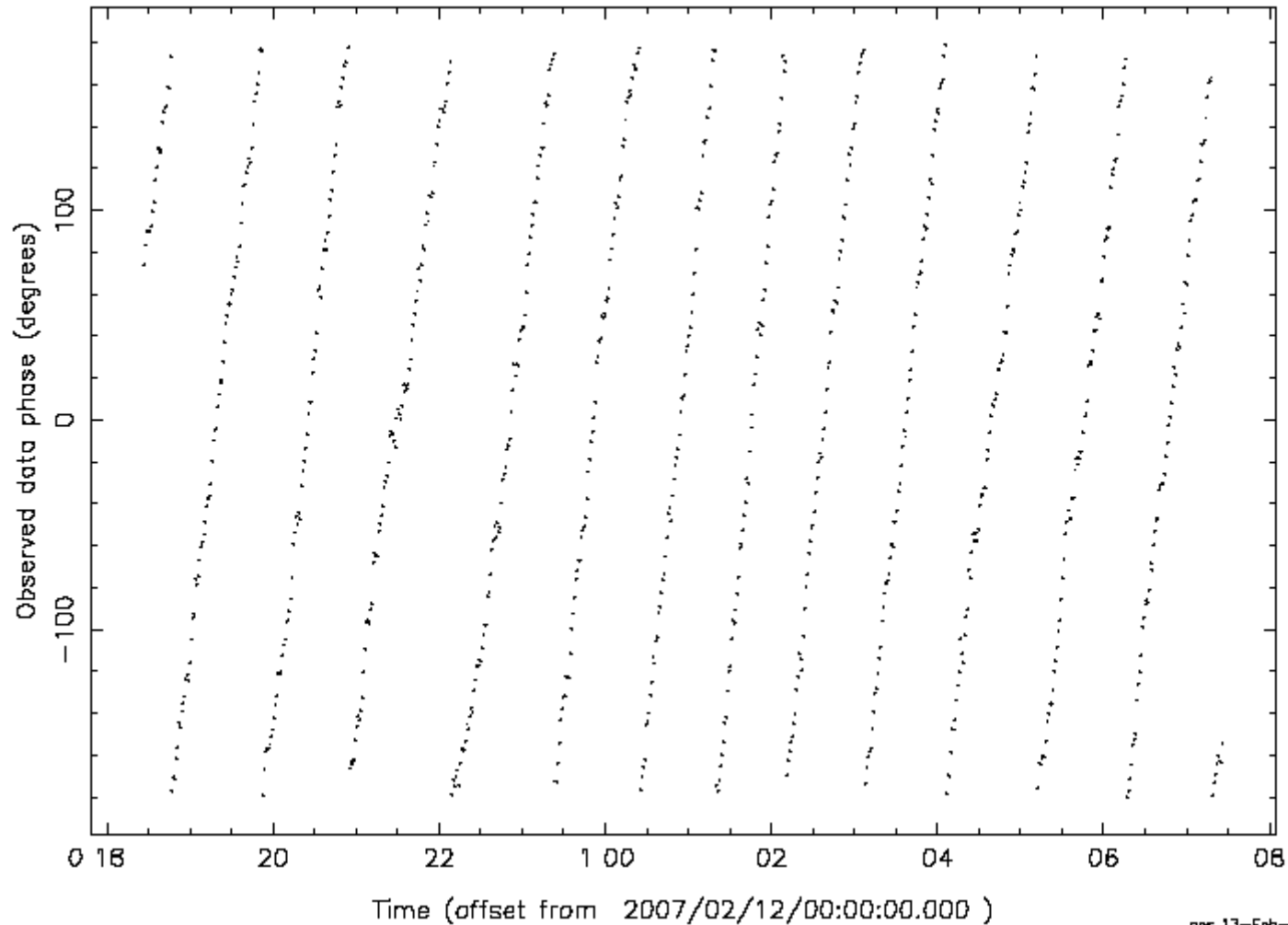


Rubidium Block diagram



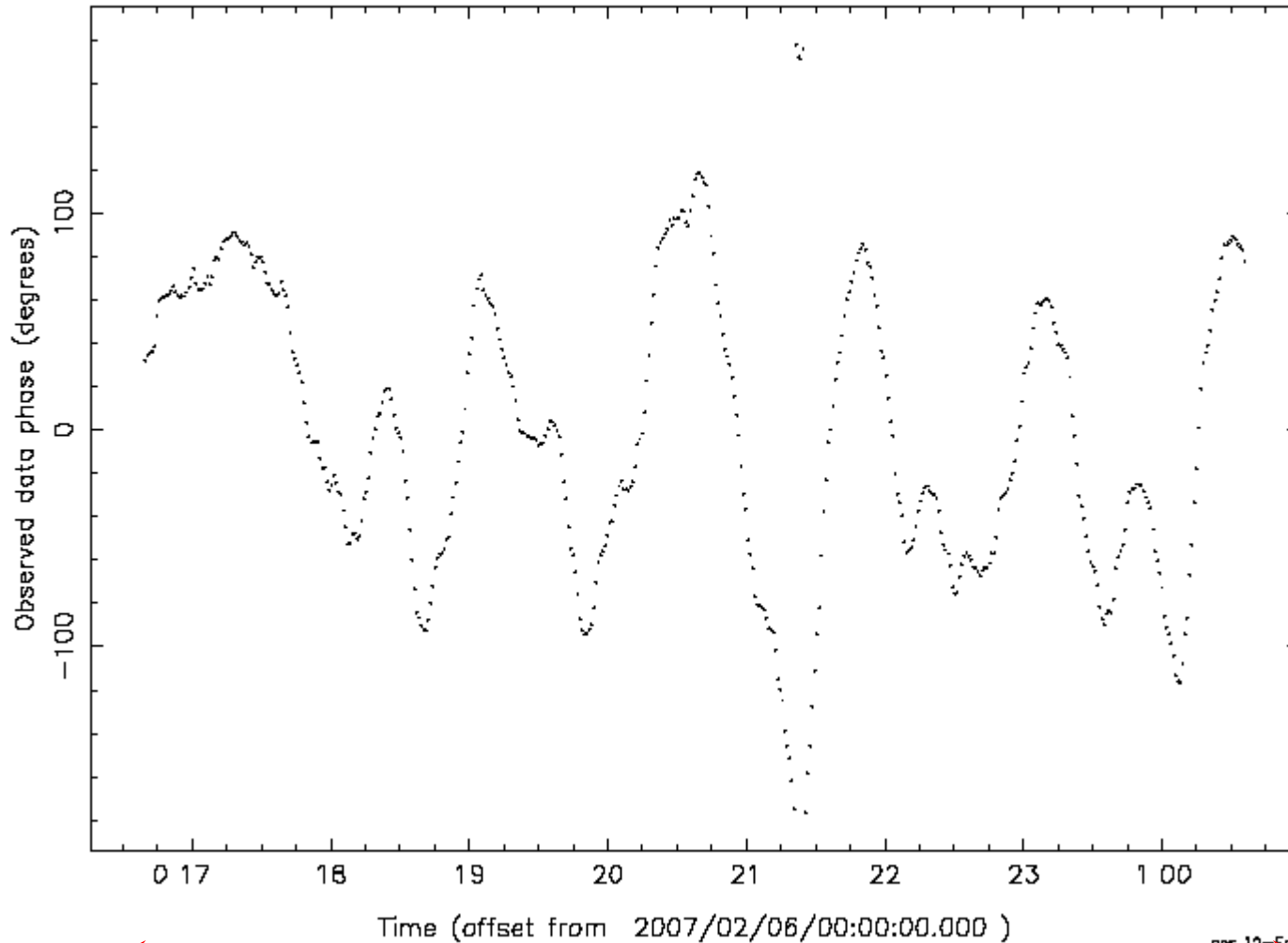
Free running Rubidium

/dop64_4/ger/LOFAR/CS1/data/12feb07/L2007_01392_SB4-5.MS Spectral Window: 2 Polarization: 1 Field
YY Antenna1 = 1 Antenna2 = 9



Modifications 1

'dep64_4/ger/LOFAR/CS1/data/6feb07-L1286/L2007_01286_SB0.MS Spectral Window: 1 Polarization: 1 File
YY
Antenna1 = 1 Antenna2 = 2



13ns

PT2 GA7
AWG/2005/07/05

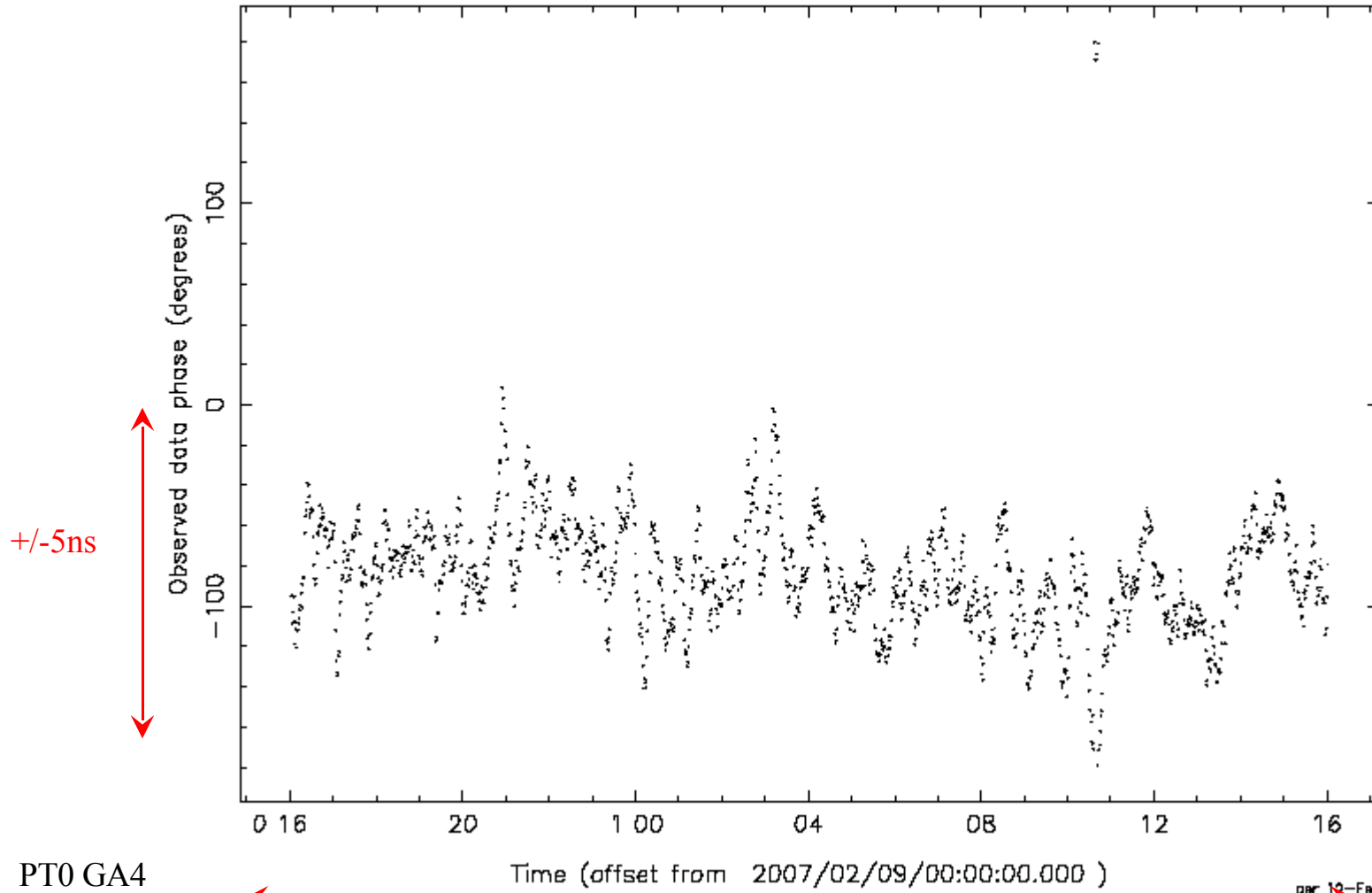
8 hr

ger 12-Feb-2007 11:18



Modifications 2

op64_4/ger/LOFAR/CS1/data/9feb07-L1383/L2007_01383_SB4-5.M5 Spectral Window: 2 Polarization: 1 F



PT0 GA4

ger 12-Feb-2007 06:11

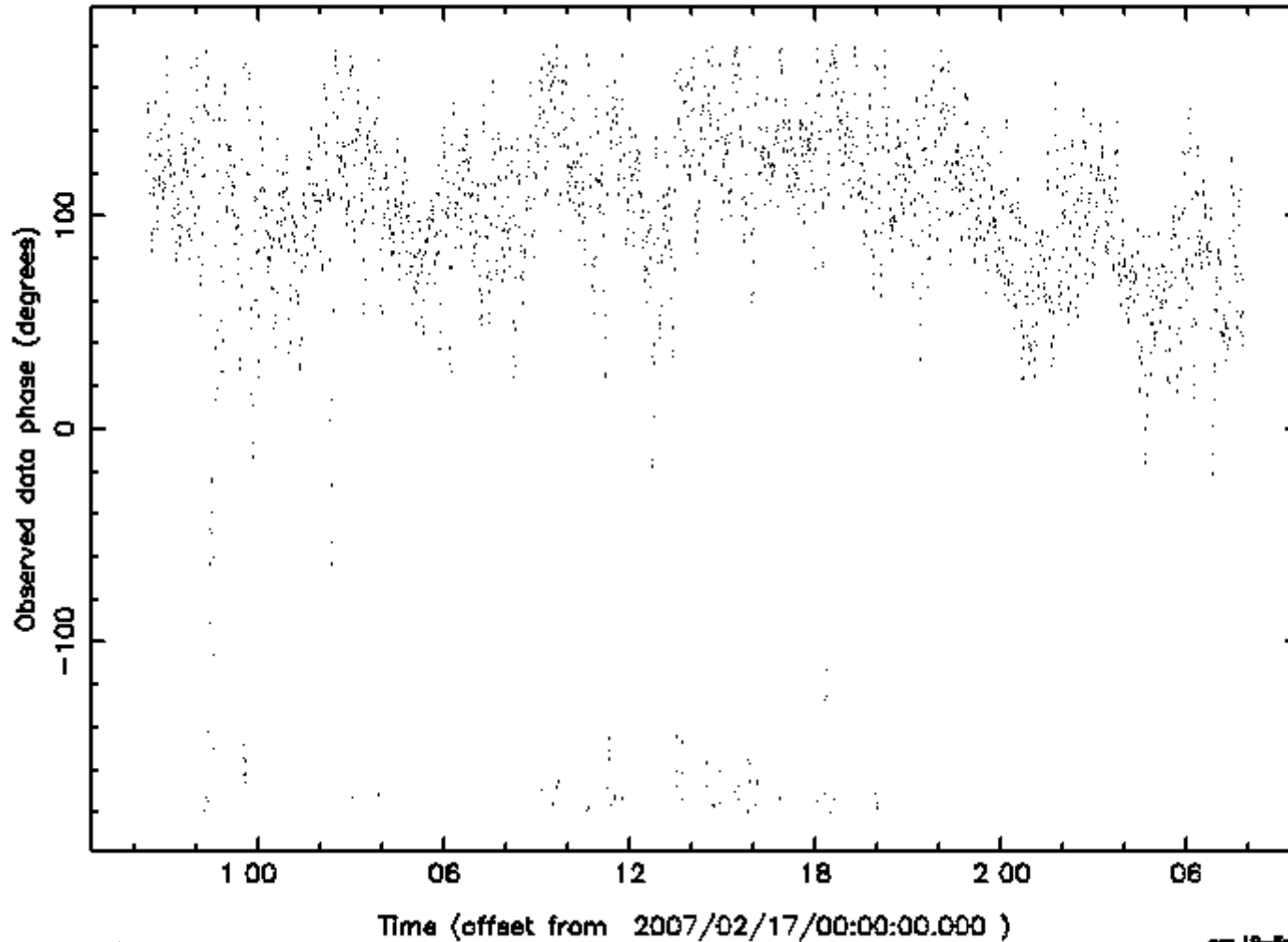
AWG/2005/07/05

8 hr



Modifications 3

sp64_4/ger/LOFAR/CS1/data/18feb07-L1463/L2007_01463_SB4-5.MS Spectral Window: 2 Polarization: 1 F
YY Antenna1 = 4 Antenna2 = 12



PT1 GA3

36 hr
AWG/2005/07/05

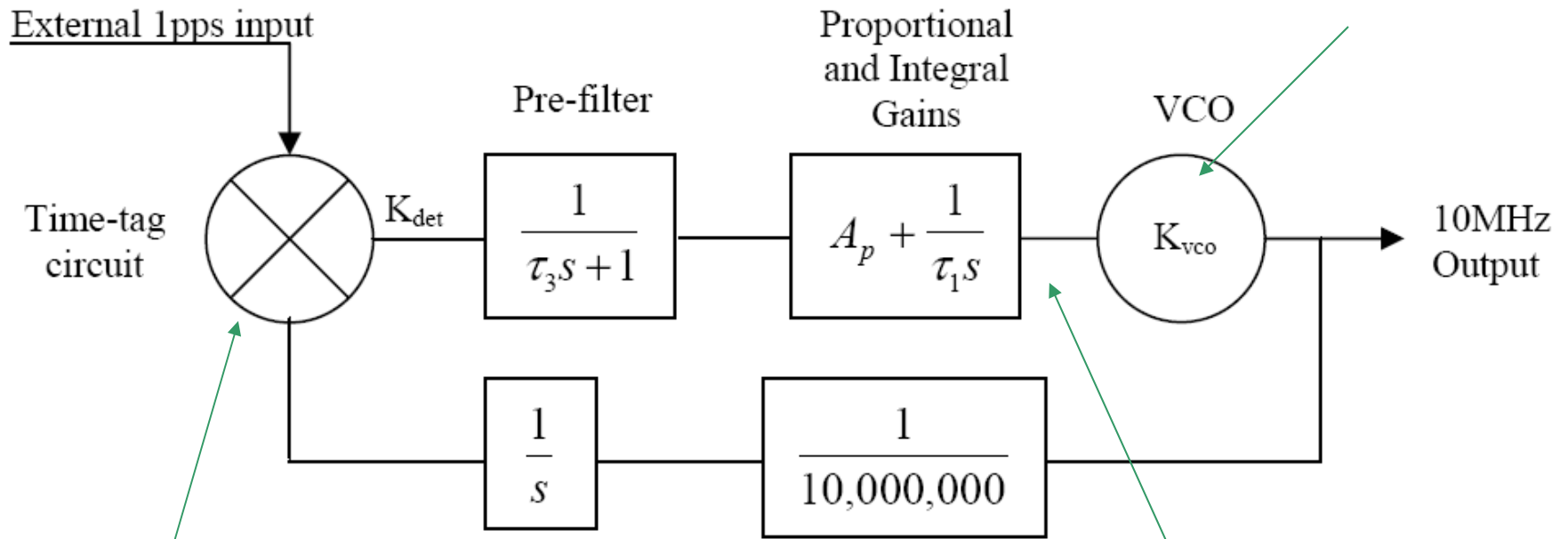
36 hr

ger 18-Feb-2007 13:48



Rubidium Block diagram

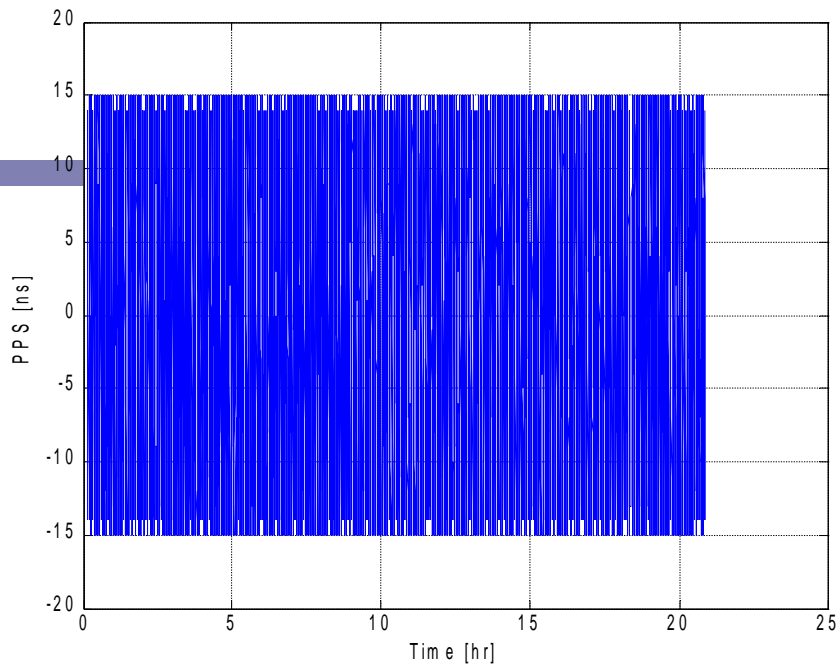
Rubidium Case Temperature



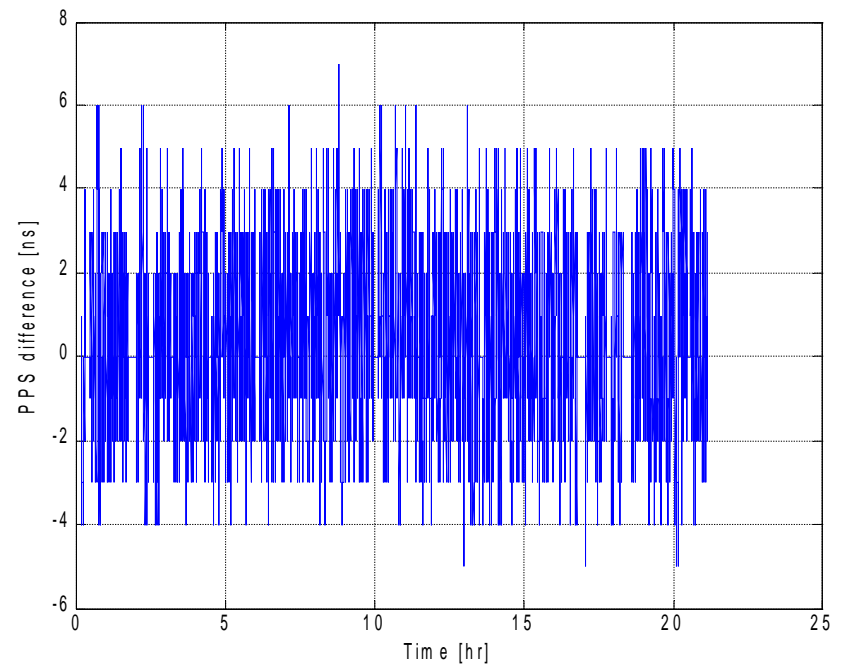
Time Tag of input PPS

Frequency Control Parameter

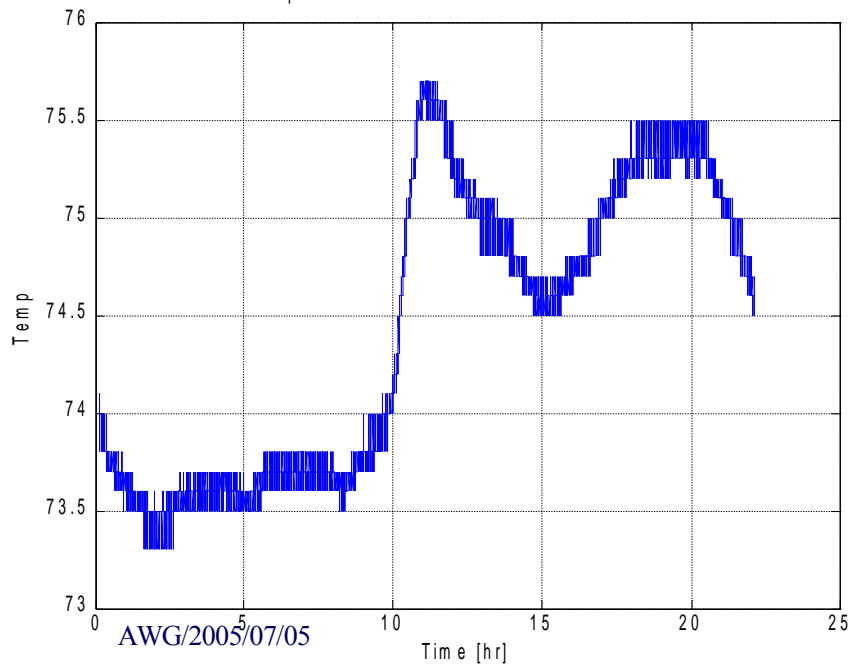
PPS from GPS start:18-Feb-2007 00:08:59



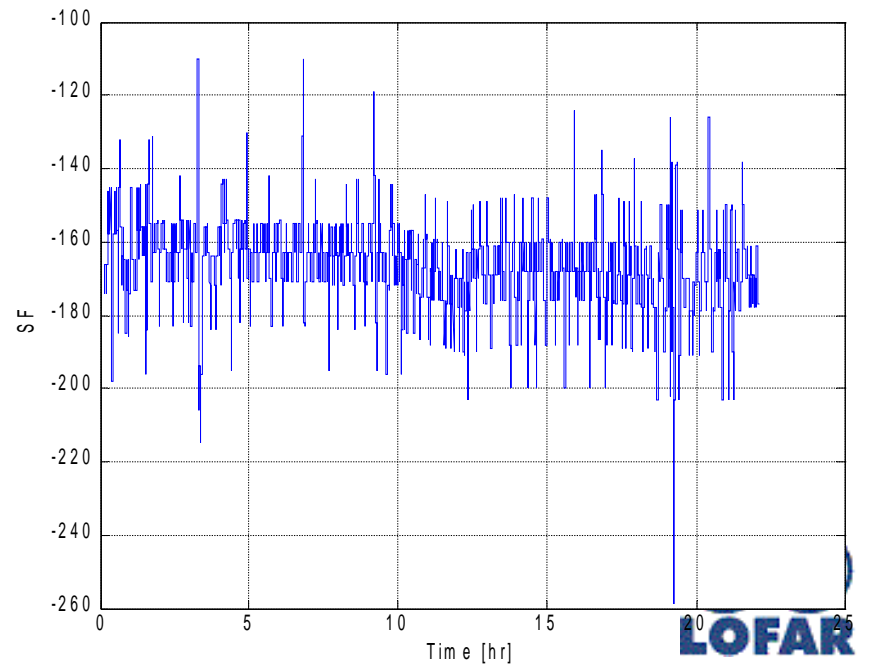
PPS difference start:18-Feb-2007 00:08:59



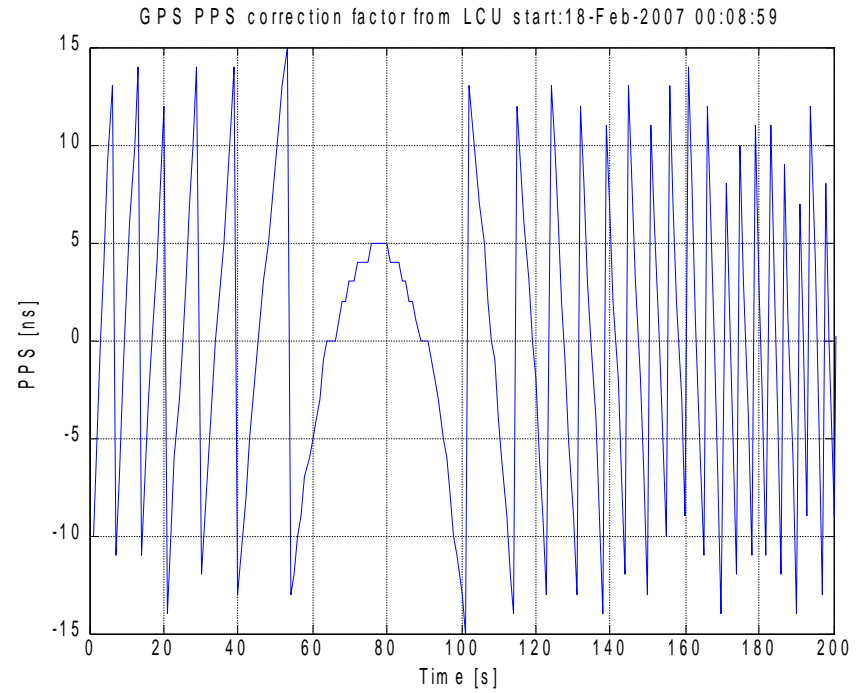
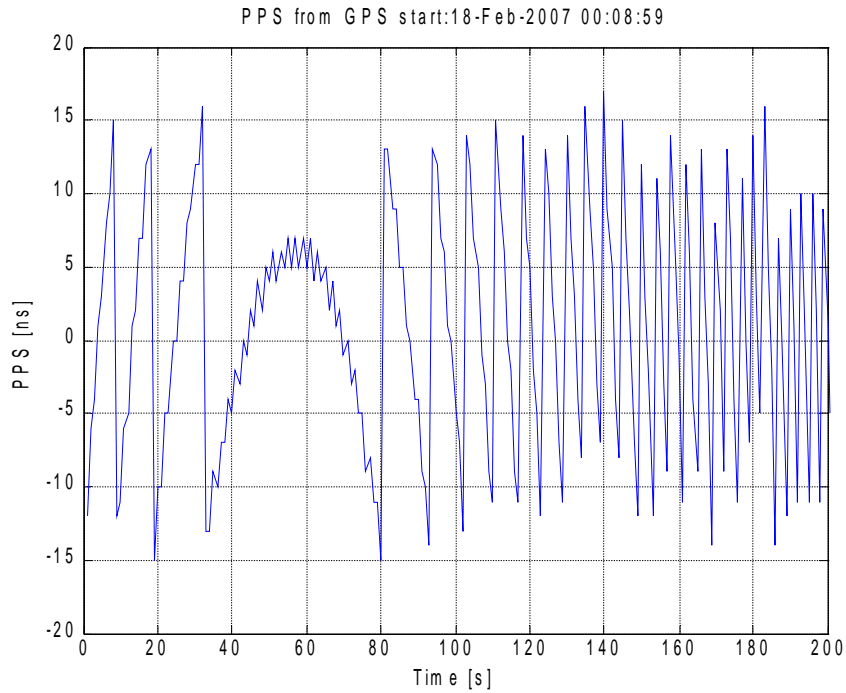
Temp of Rb case start:18-Feb-2007 00:08:59



SF start:18-Feb-2007 00:08:59



GPS PPS

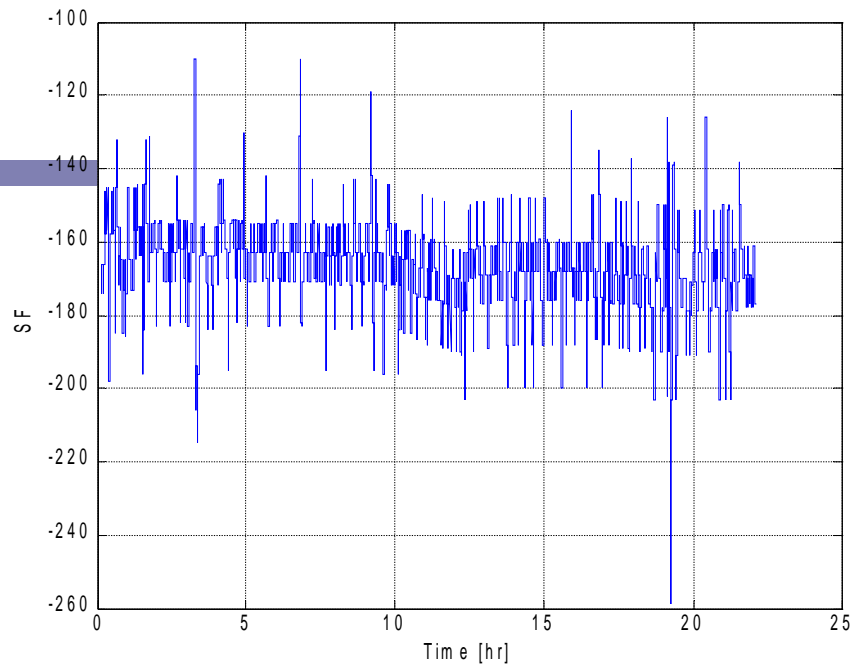


Next steps

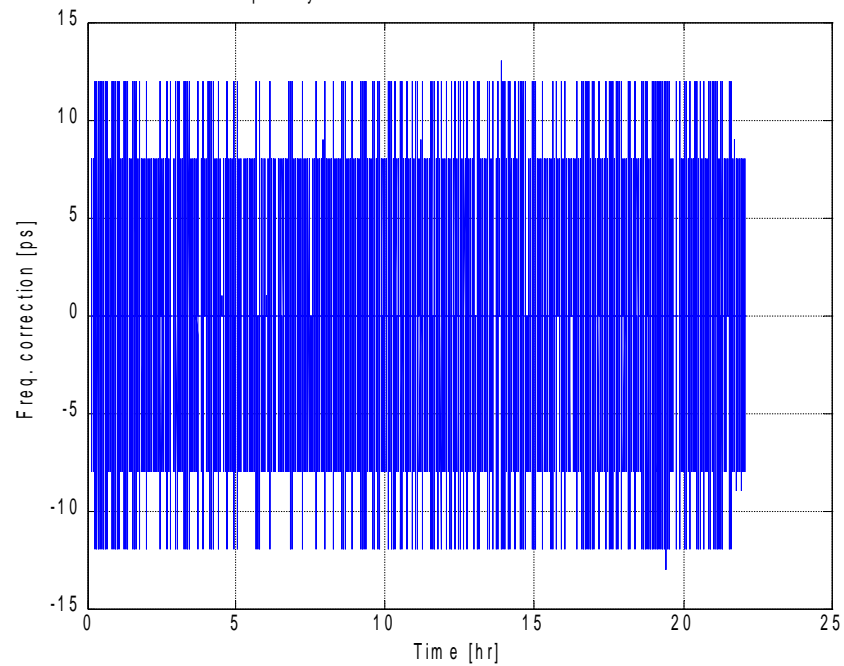
- ◆ New lab measurements i-Lotus GPS receivers, with different settings
- ◆ Temperature measurement with FS725
- ◆ XCOR with CW in same station (adding two signal in CS010)
- ◆ Measurement with RFI source on all stations



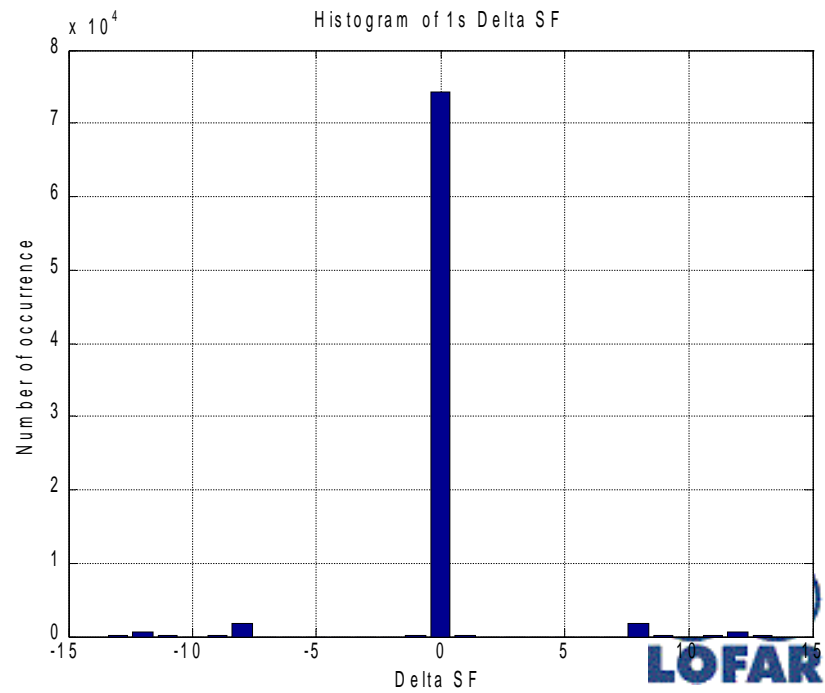
SF start:18-Feb-2007 00:08:59

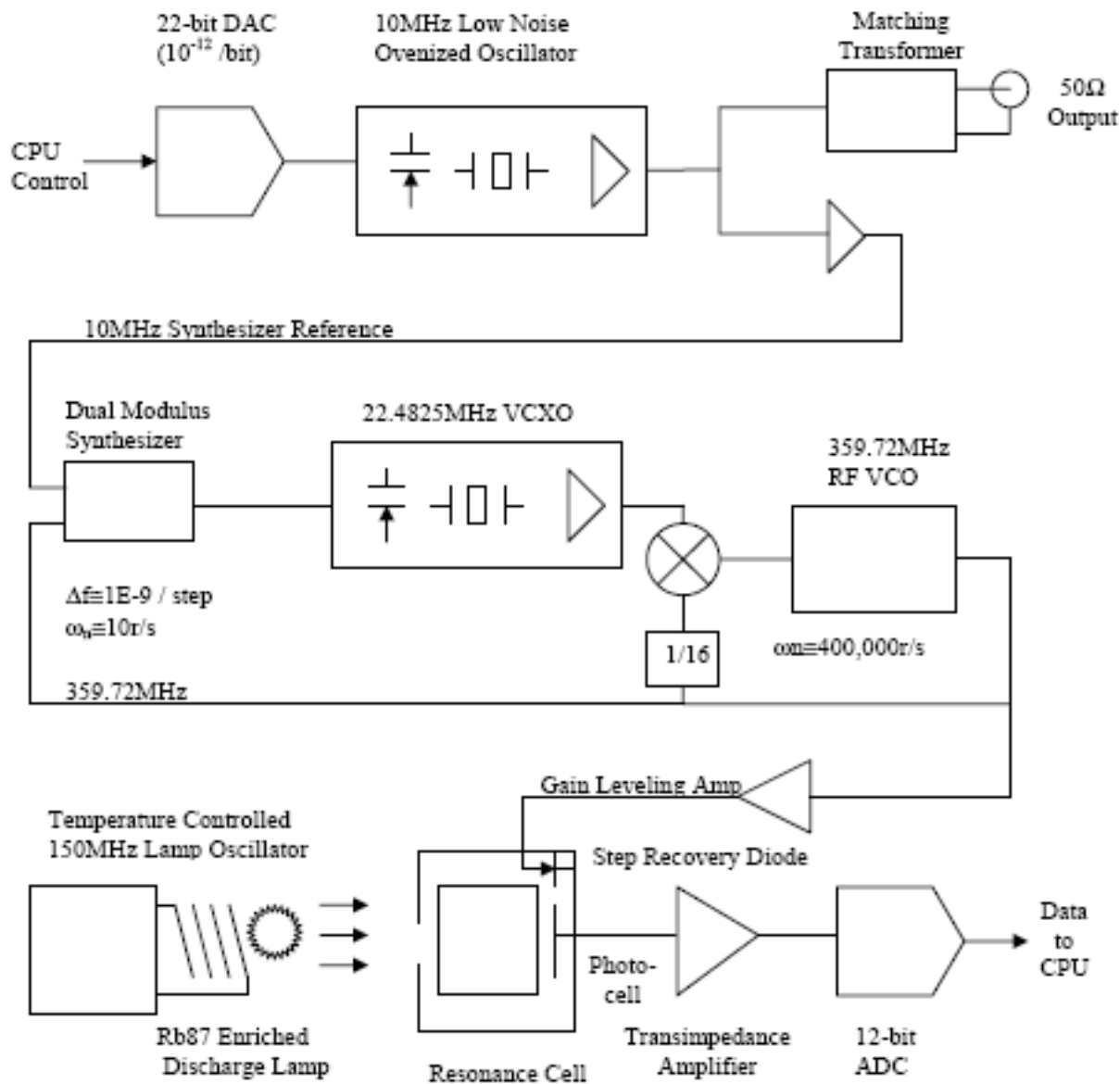


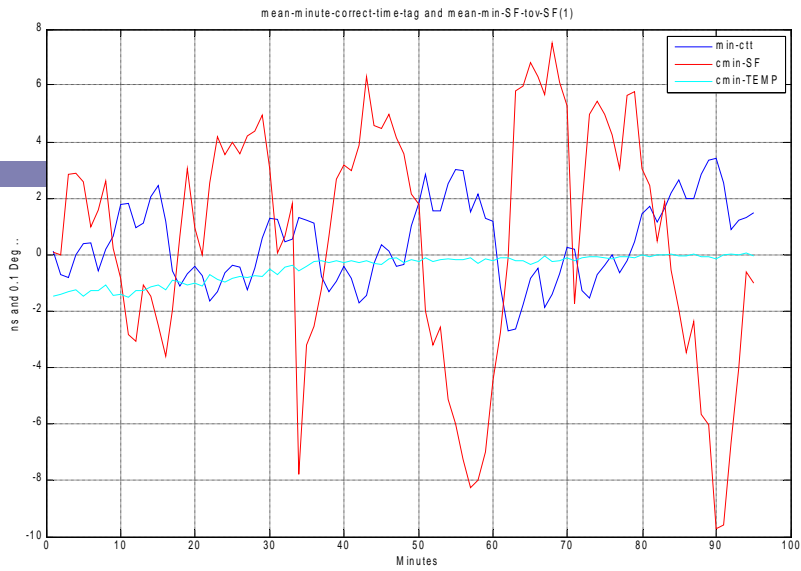
Frequency Correction start:18-Feb-2007 00:08:59



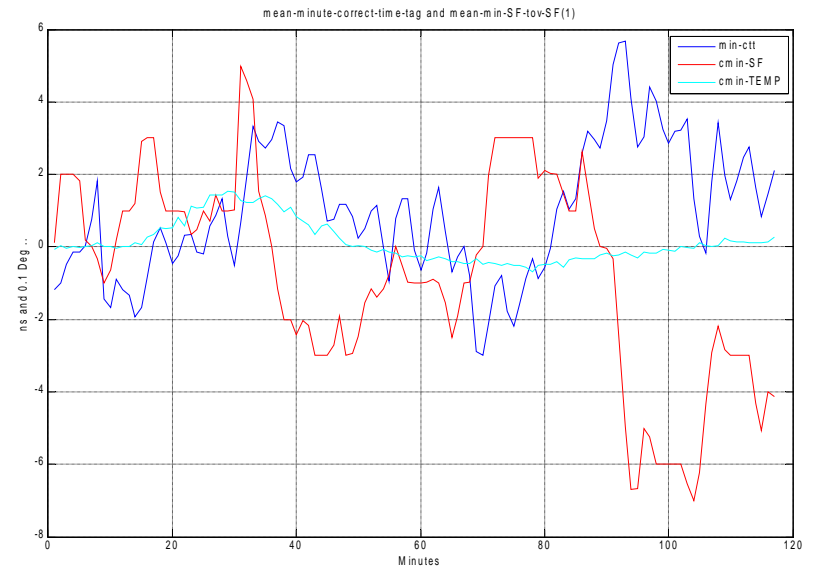
Histogram of 1s Delta SF



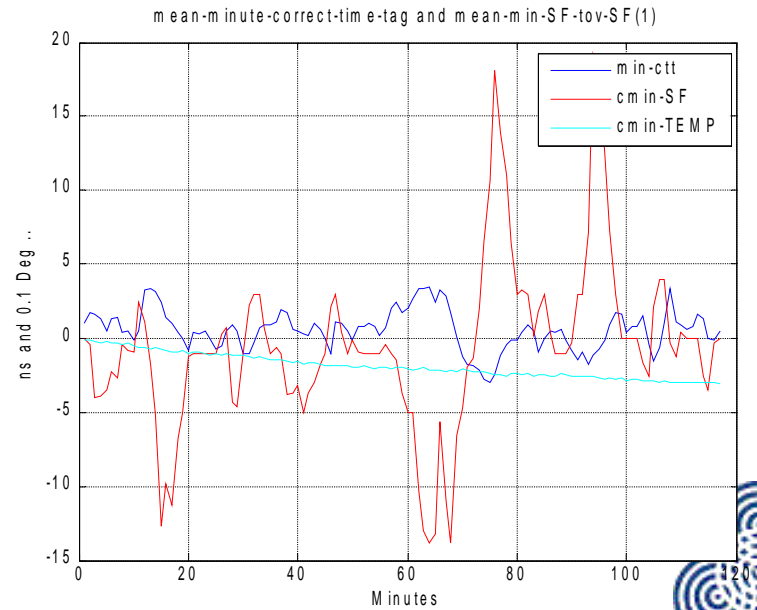




◆ pt0 ga7 pf2



◆ pt2 ga7 pf4

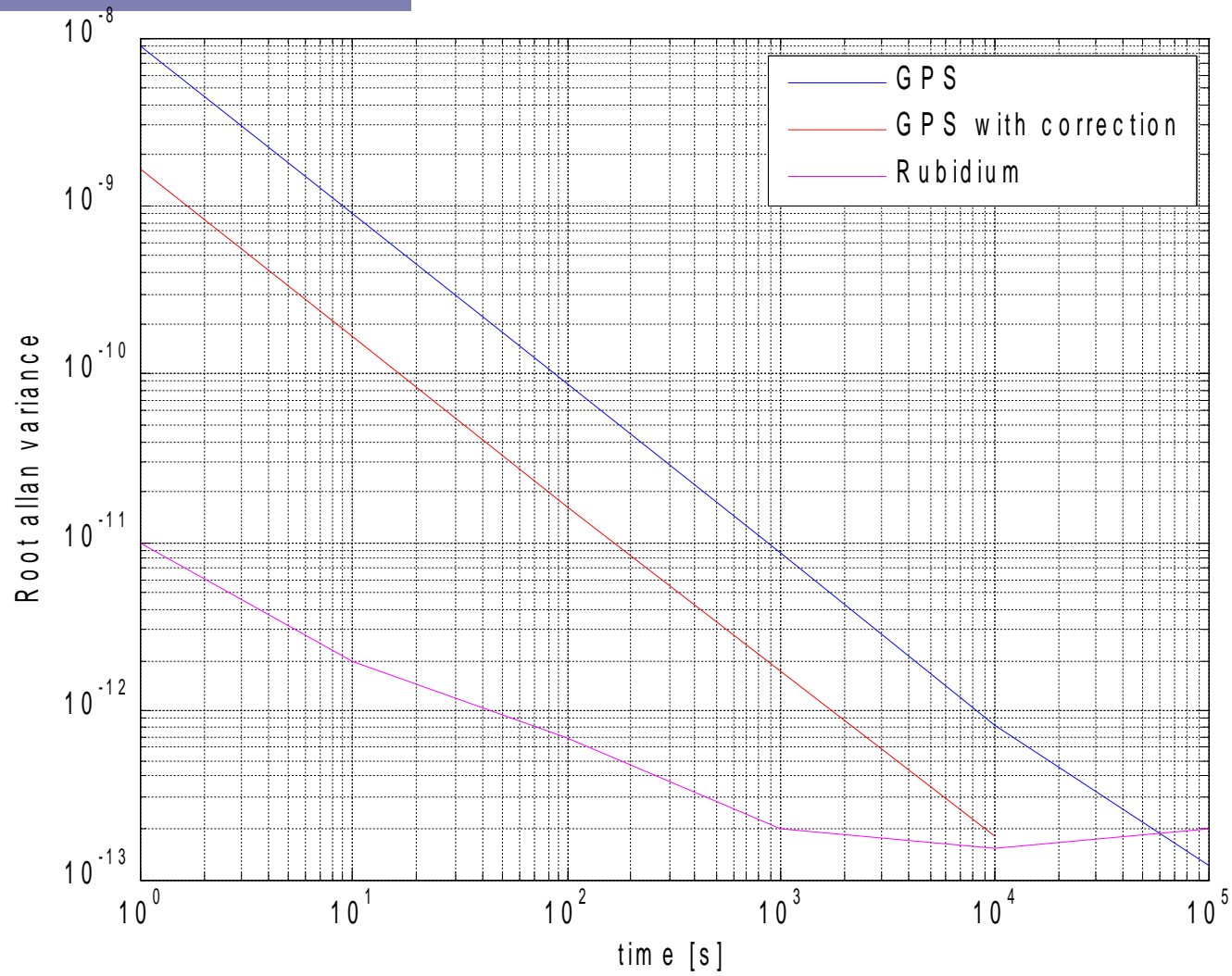


◆ pt2 ga3 pf4

Rubidium Temperature

- ◆ SPEC.: 10^{-10} -20..+65 $\rightarrow 10^{-11}/\text{grd}$
 - ⊕ 0.1 grd $\rightarrow 10^{-12}$
- ◆ MES.: 0.5 grd 30 min
 - ⊕ 0.5 grd 30 min = 1 ns

Allan Variance of GPS



10sec

1.6min

16min

2.7hr

