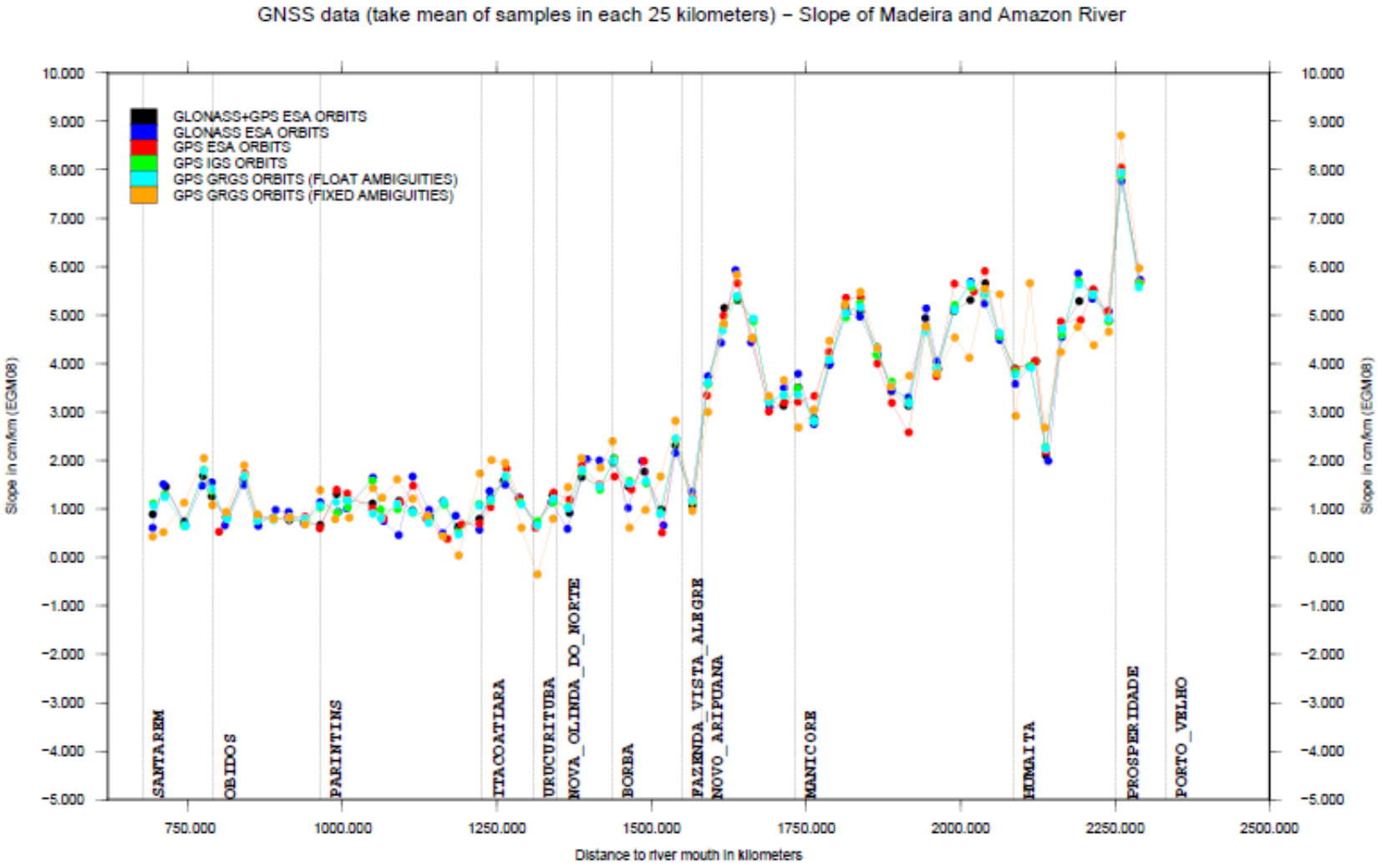
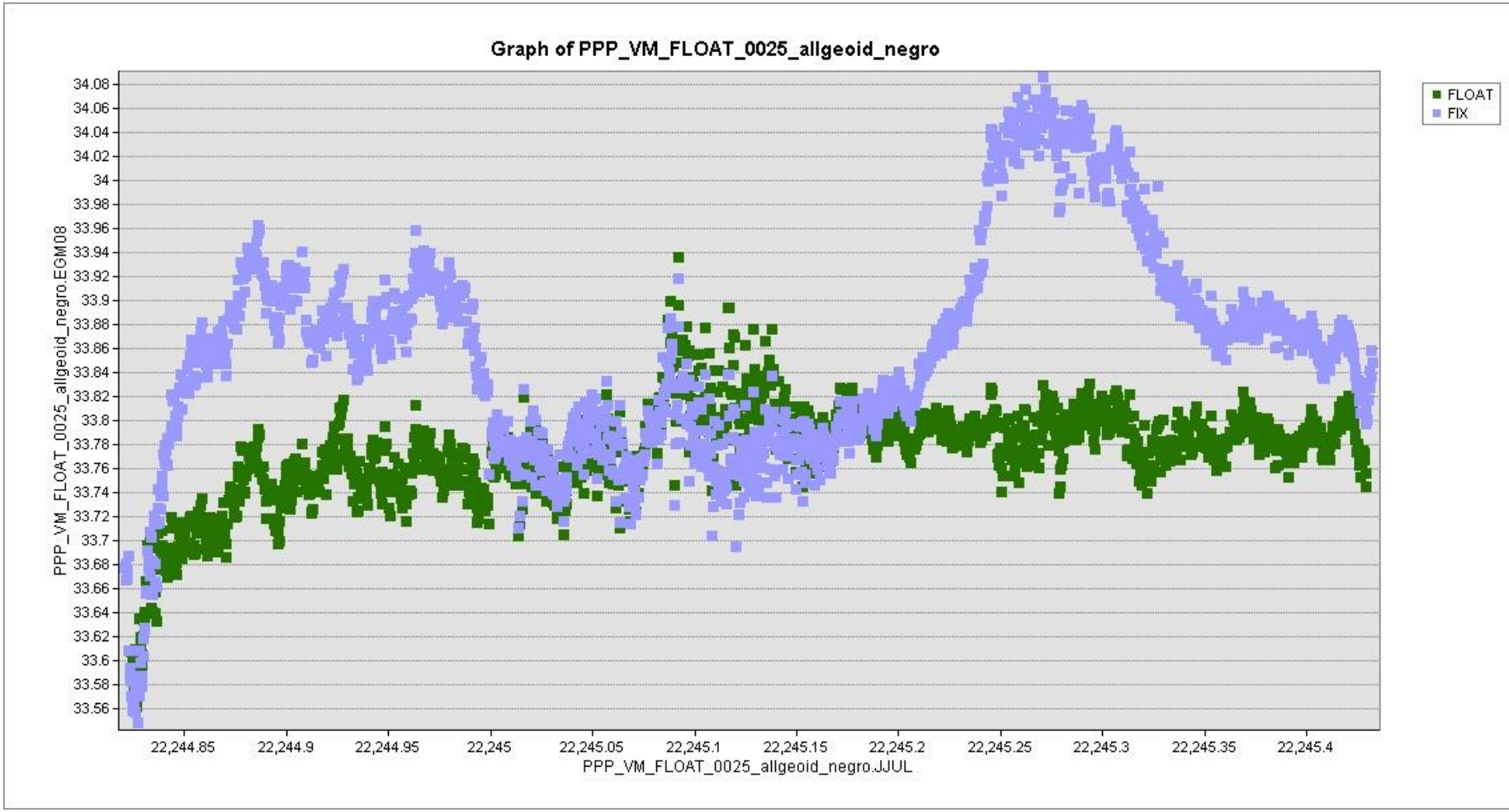
Journées GINS 2015

Résultats de traitements GNSS PPP avec GINS:

- Daniel Moreira et al.
- Paul Maisse et al.
- Gérard Petit et al.

Travail de thèse de Daniel Moreira (Université de Rio / Université de Toulouse)




Graph of PPP_VM_FLOAT_0025_allgeoid_negro
FLOAT
FIX
PPP_VM_FLOAT_0025_allgeoid_negro.EGM08
34.08
34.06
34.04
34.02
34
33.98
33.96
33.94
33.92
33.9
33.88
33.86
33.84
33.82
33.8
33.78
33.76
33.74
33.72
33.7
33.68
33.66
33.64
33.62
33.6
33.58
33.56
22,244.85
22,244.9
22,244.95
22,245
22,245.05
22,245.1
22,245.15
22,245.2
22,245.25
22,245.3
22,245.35
22,245.4
PPP_VM_FLOAT_0025_allgeoid_negro.JJUL

Paul Maisse (EOST)

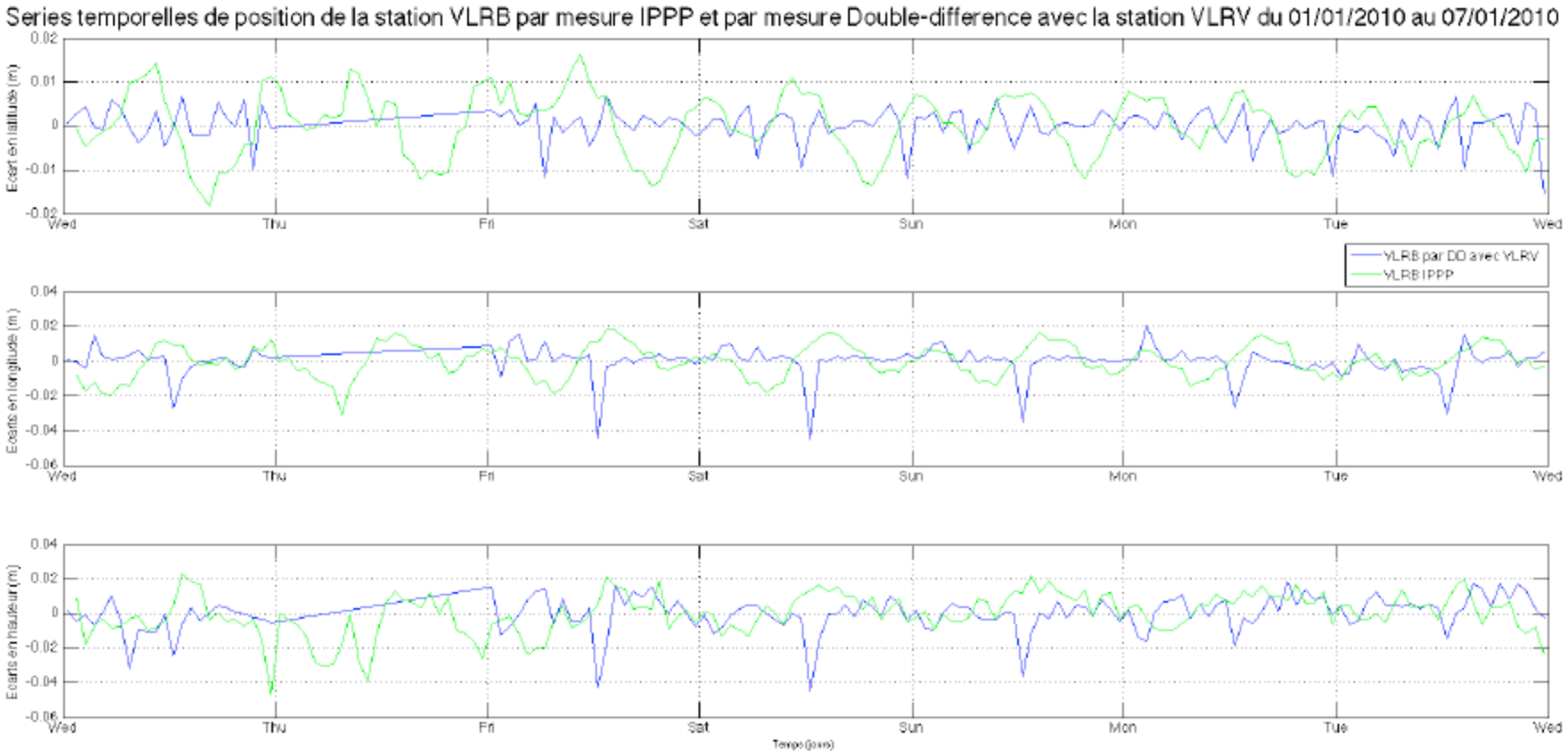


Figure 5.20 : Comparaison entre l'évolution de position de la station VLRB avec une solution GINS I-PPP horaire et une solution par double différence GINS avec la station VLRV comme référence durant la première semaine de Janvier 2010

Paul Maisse (EOST)

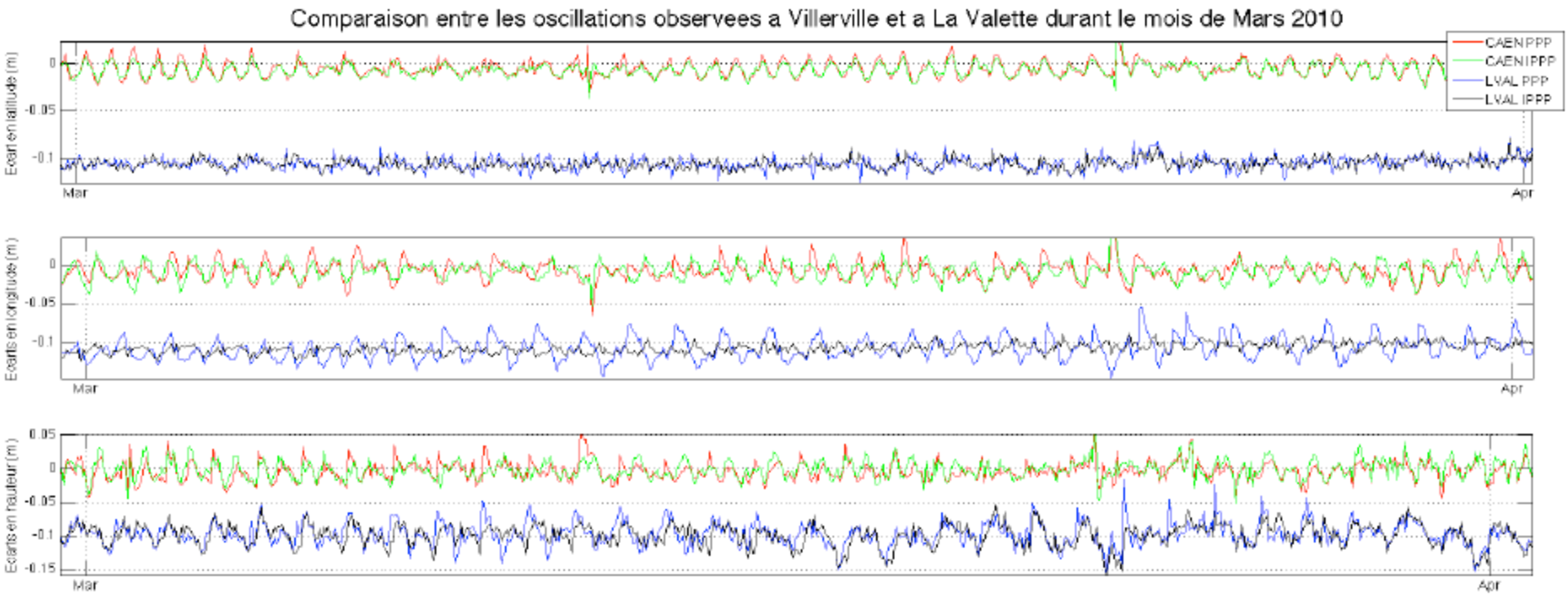


Figure 5.25 : Mise en évidence des oscillations présentes dans les séries temporelles de position des régions de Villerville et de La Valette par traitement PPP ou I-PPP avec une solution horaire durant le mois de mars 2010

$1x10^{-16}$ frequency transfer by GPS PPP with integer ambiguity resolution

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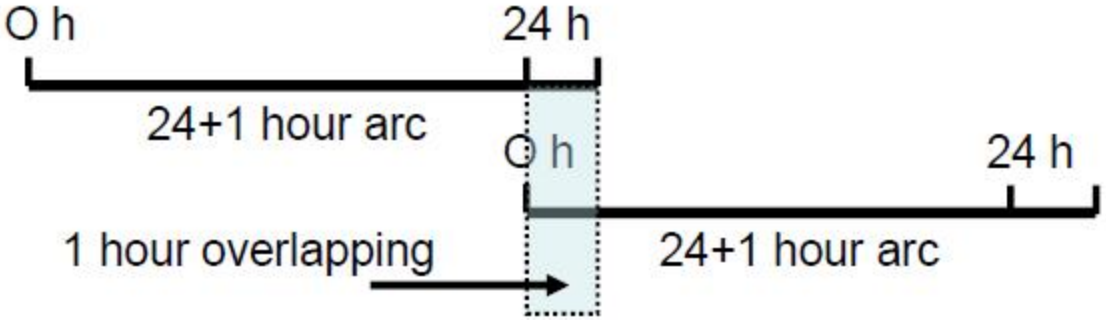
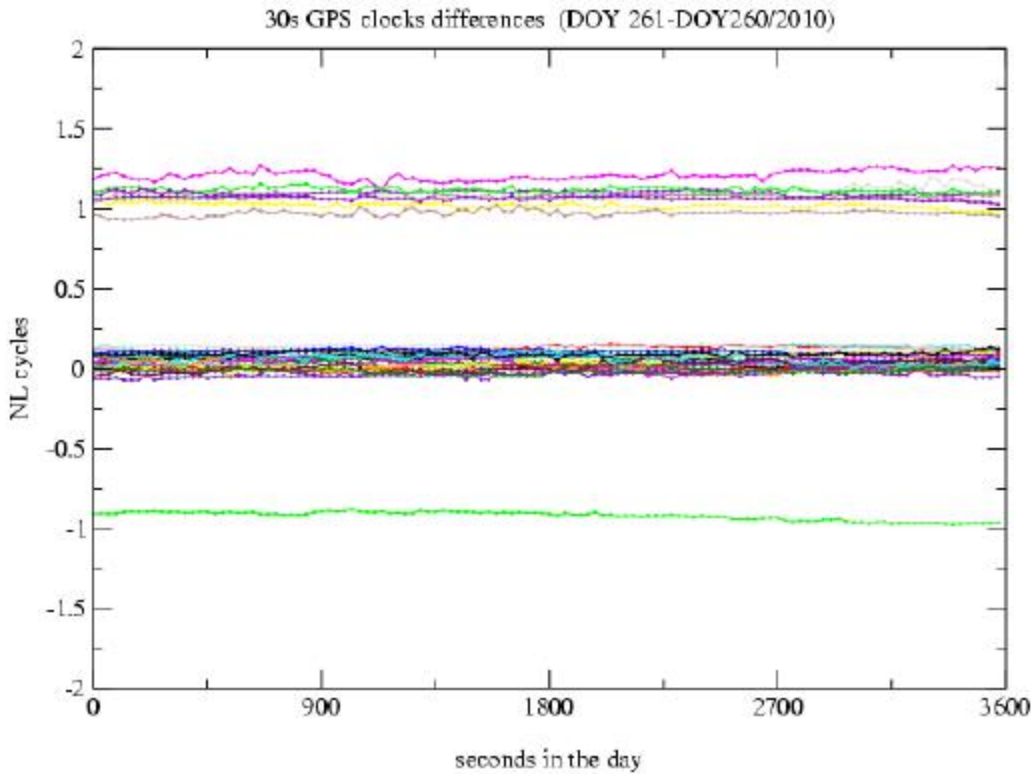
Article Keywords:	Frequency comparisons, Carrier phase ambiguities, GPS precise point positioning
Abstract:	Since many years, the time community has been using the Precise Point Positioning (PPP) technique using GPS phase and code observations to compute time and frequency links. However progress in atomic clocks implies that the performance of PPP frequency comparisons is a limiting factor in comparing the best frequency standards. We show that a PPP technique where the integer nature of phase ambiguities is preserved provides significant improvement over the classical use of floating ambiguities. We demonstrate that this Integer-PPP (IPPP) technique allows frequency comparisons with $1x10^{-16}$ accuracy in a few days and can be readily operated with existing products.

“integer property” of the GRG clock products

Overlaps of two successive clock solutions





→ Possible to estimate a continuous (phase) clock solution

cnes

Link	IPPP 5-h stability	Gain /Classical	IPPP 1-d stability	Gain /Classical	IPPP 4-d stability (fountains)	Gain /Classical
PTB-USNO	2.0×10^{-15}@ 5.3h	40%	1.1×10^{-15}@ 22h	6%	3.4×10^{-16}	40%
OP-PTB	1.8×10^{-15}@ 5.3h	32%	1.0×10^{-15}@ 22h	10%	5.0×10^{-16}	14%
OP-USNO	2.1×10^{-15}@ 5.3h	31%	1.0×10^{-15}@ 22h	6%	4.7×10^{-16}@ 3.2d	3%
PTB-FO2(Rb)	2.5×10^{-15}@ 4.8h	27%	0.7×10^{-15}@ 1.6d	8%	5.2×10^{-16}@ 3.2d	7%
PTB-Rb5	4.1×10^{-15}@ 4h	21%	1.0×10^{-15}@ 1.3d	10%	5.2×10^{-16}@ 2.7d	20%

STABILITY PERFORMANCES OF IPPP AND COMPARISON TO CLASSICAL PPP (BIPM SOLUTION OBTAINED WITH NRCAN). FOR THE TOP THREE LINES, THE 5-HOUR AND 1-DAY VALUES ARE FROM THE H-MASER COMPARISONS AND THE 4-DAY VALUES FROM THE FOUNTAIN COMPARISONS. ACTUAL AVERAGING DURATIONS ARE INDICATED.

- PTB-CSF1–USNO-RB5
- SYRTE-FO2(RB)–USNO-RB5
- SYRTE-FO2(RB)–PTB-CSF1.