

**DORIS combinations results from EGU
and with new SINEX submissions**

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Summary

Weekly Combinations versus ITRF2005 (EGU poster)

New SINEX submissions

- **Inasan (sat model corr.)**
- **Legos/CLS (Envisat, atmopsh. loading)**
- **Geoscience Australia**

Analysis of ign-lca production

Cumulative combination

Per station analysis (P. Yaya)

Weekly Combinations vs ITRF2005

IDS/ITRF2005 datum : sub-network with best σ (pos < 1 cm, vel < 2 mm/yr)

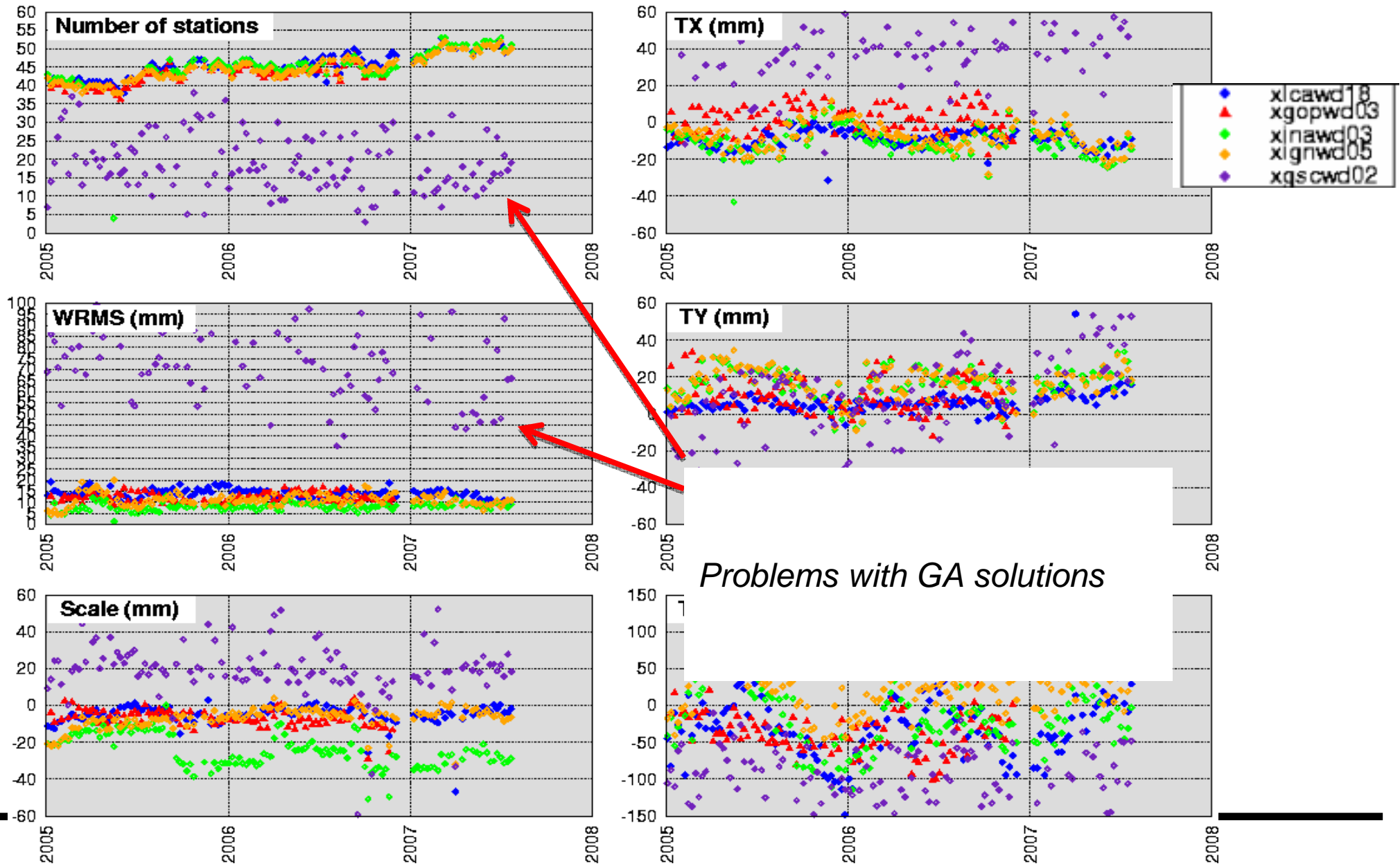
Preparation of the sinex

- Verification of station identification (dome #, mnemo)
- Rejection of perturbing stations at given period
- Verification of solution number (breaks)
- Projection using minimal constraints
- Combination with inner-constraints on translation, scale and rotation
- Iteration after per solution station rejection with high residuals

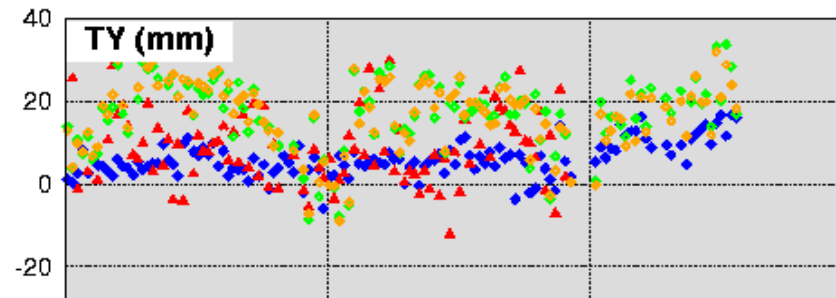
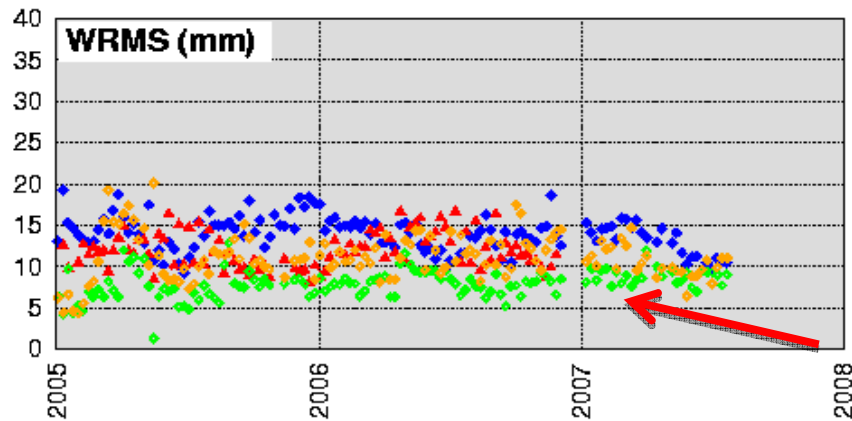
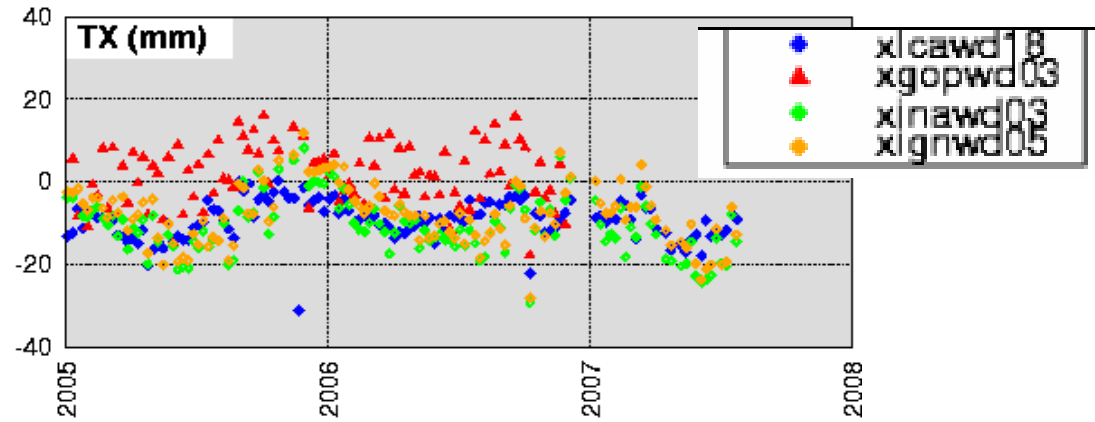
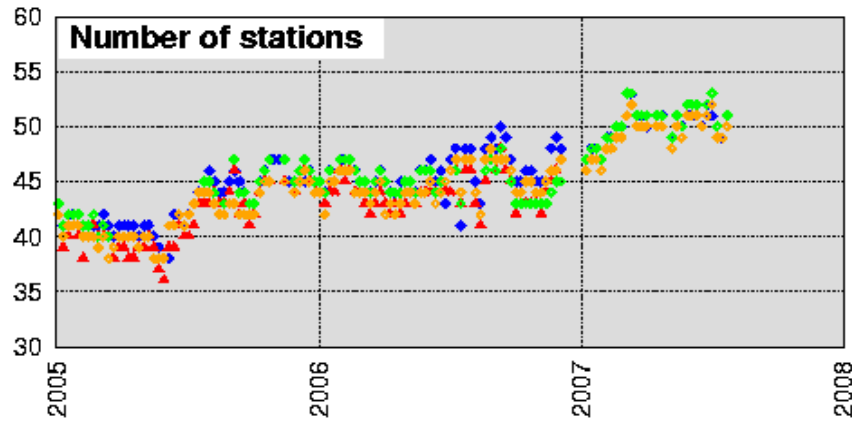
Per week combination

- Datum propagation at epoch of the solutions
- 7 param. Transf.
- extraction from the datum of the stations that are not in the solutions
- new 7 param. Transf.
- rejection of high residual stations (check of min. number of stations per AC)
- iteration with application of variance factors for ponderation

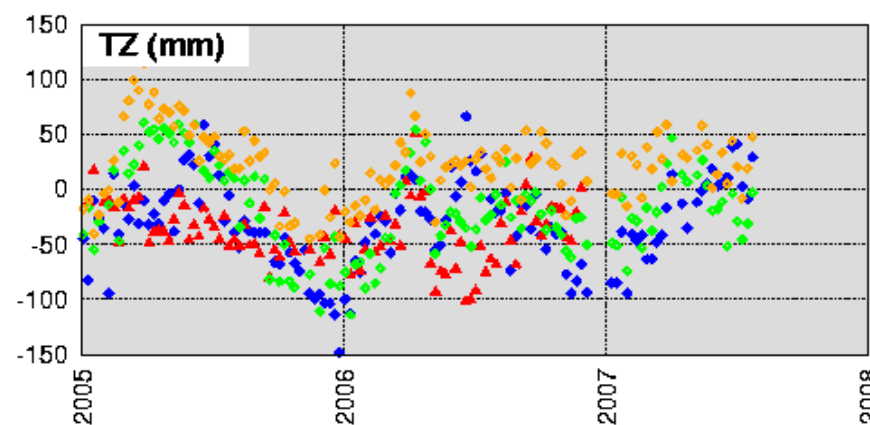
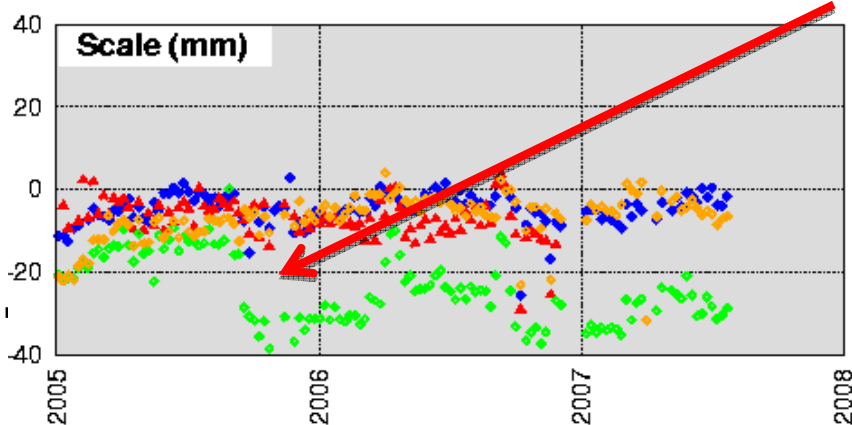
Weekly Combination with 5 ACs (2005-2007)



Weekly Combination with 4 ACs (2005-2007)



*Lower residuals for inasan (need checking)
Pb with inasan solutions (resubmitted)*

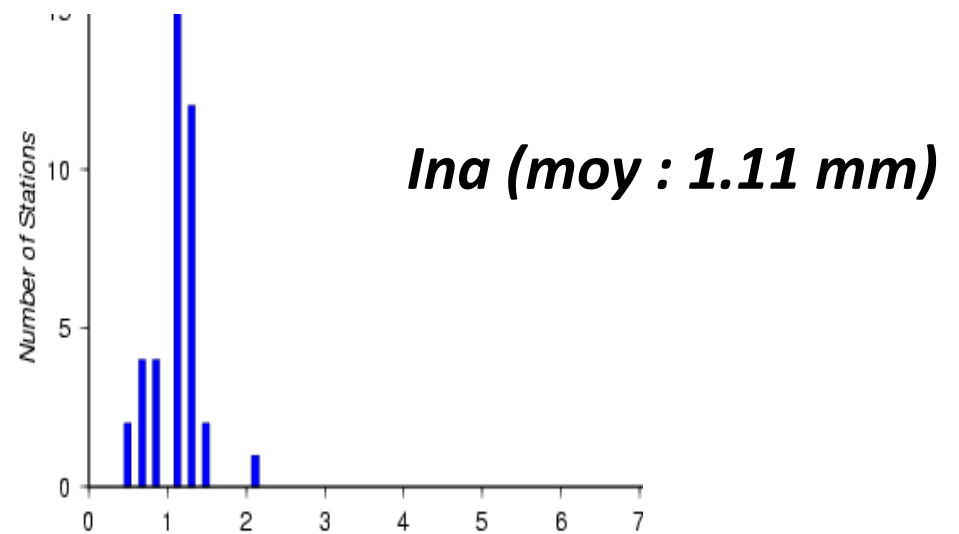
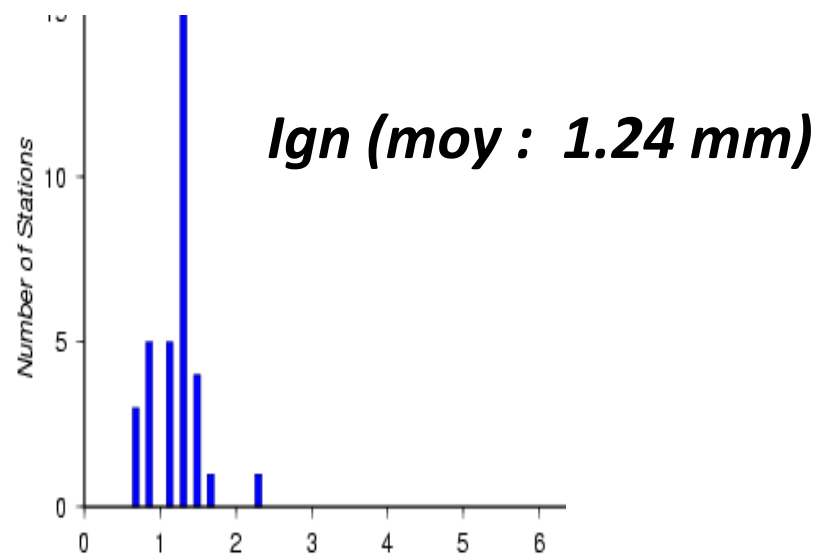
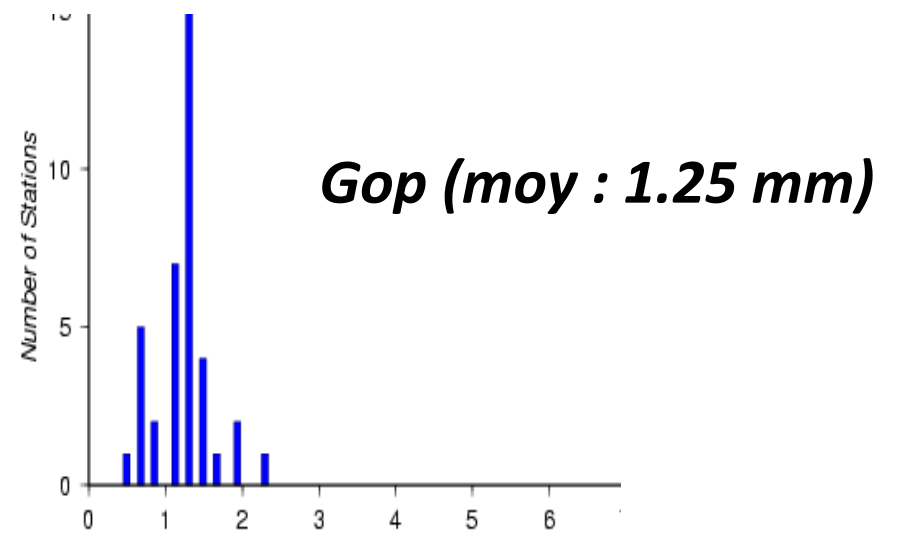
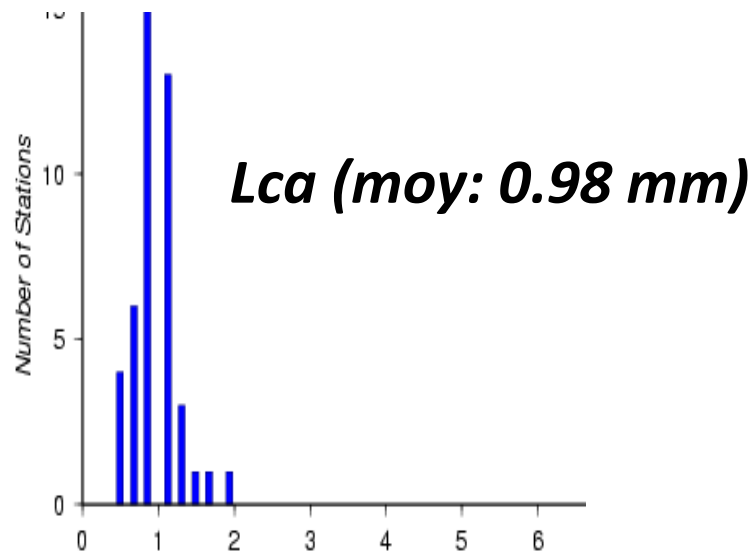


Inasan WRMS checking: ponderation analysis

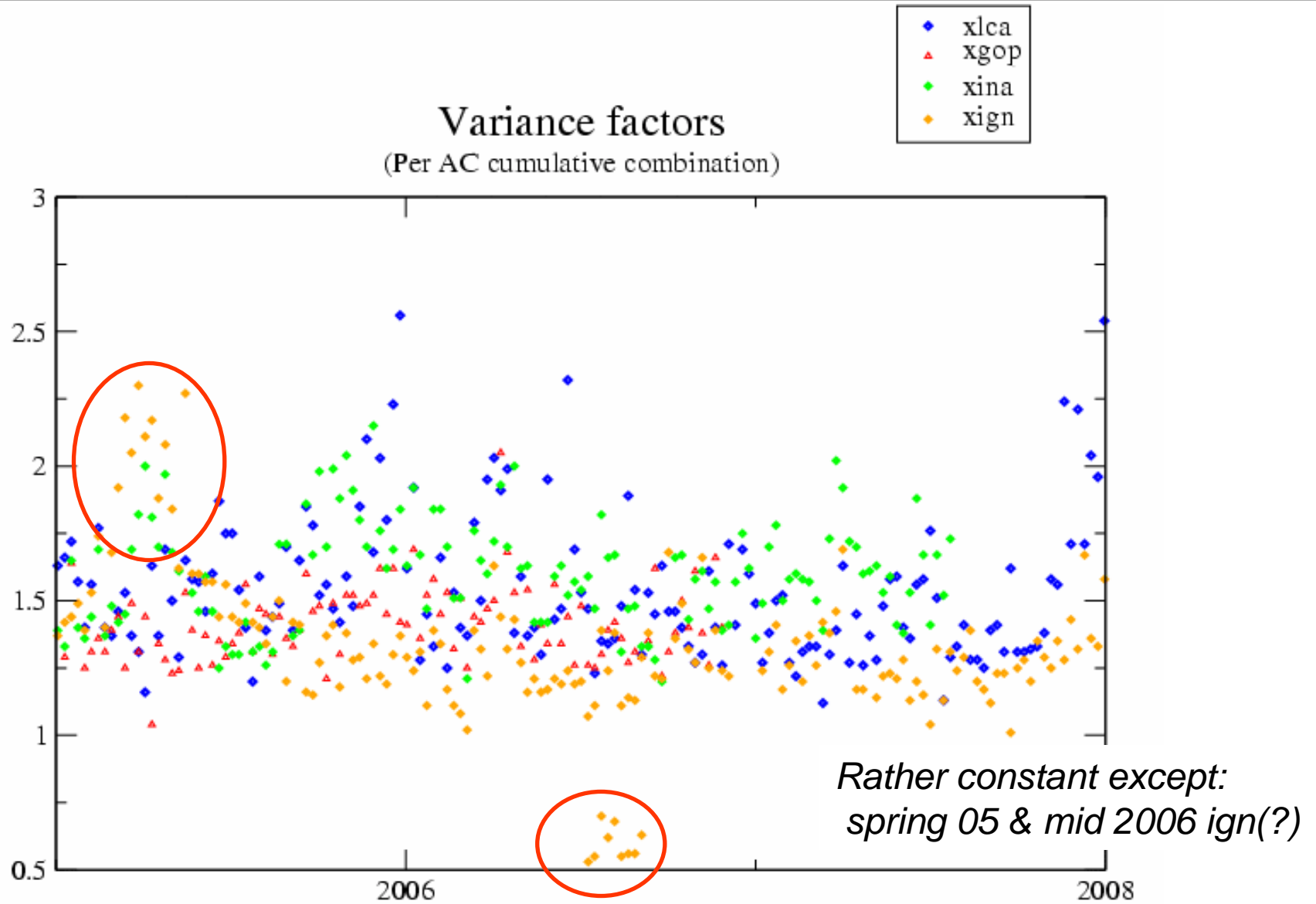
Test 1 : Histogramms of station spheric sigmas per AC, directly read on the delivered sinex after projection

*Test 2 : Cumulative combination per AC (2005-2008)
Plot of CATREF variance factors per week and per AC to verify continuity eventually detect strategy changes*

Distribution of spheric sigmas week 06008



CATREF variance factors per week and per AC (individual combination)

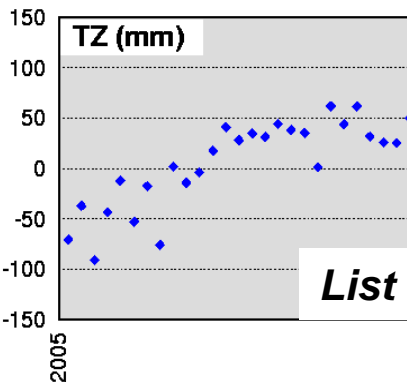
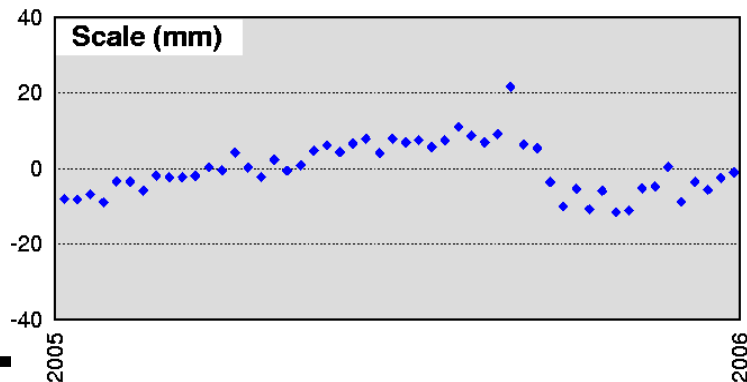
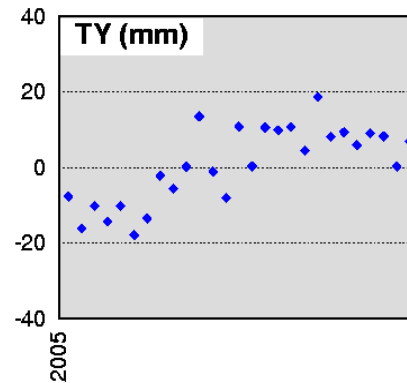
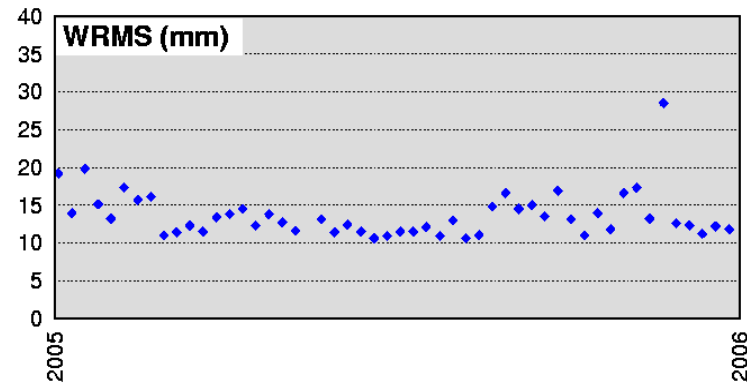
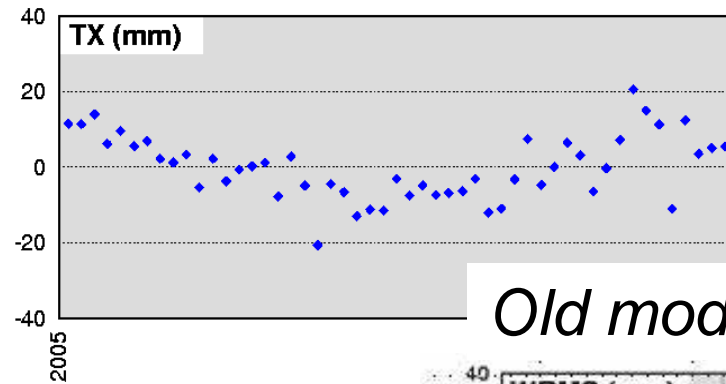
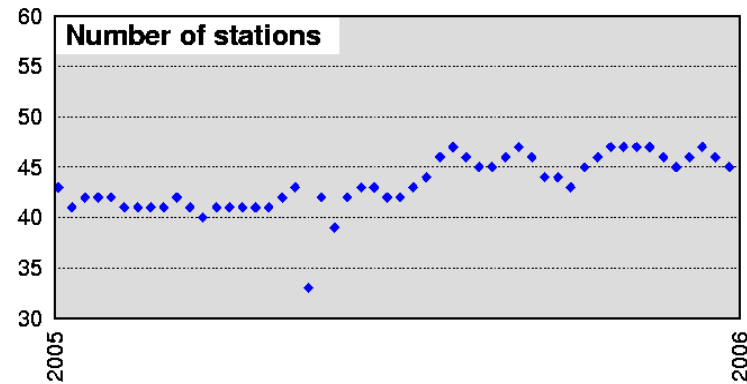


June 08 : new sinex resubmissions

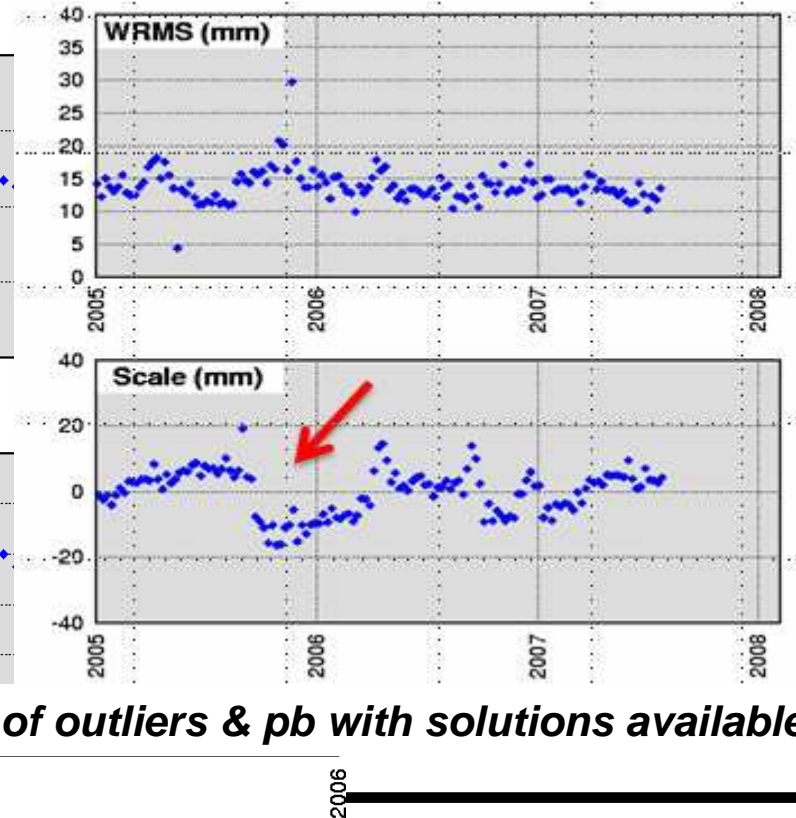
- New solutions since last AWG (March 08)

<i>AC</i>	<i>software</i>	<i>Deliveries</i>	<i>Update/test</i>
<i>INA</i>	<i>GYPSY/OASIS</i>	<i>2005 + few weeks 2007</i>	<i>Sat model xxx</i>
<i>LCA</i>	<i>GINs/DYNAMO</i>	<i>weekly (operational)</i>	<i>Envisat model correct. & SLR CoM/CoP corr. no atmops. Loading</i>
<i>LCA</i>		<i>after Dec07 & Mar08</i>	
<i>LCA</i>		<i>after /2008</i>	
<i>(GSC</i>	<i>Geodyn</i>	<i>2005</i>	<i>maneuvers, input files corr. not yet combined)</i>
<i>IGN</i>	<i>GYPSY/OASIS</i>	<i>weekly (operational)</i>	
<i>GOP</i>	<i>BERNESE</i>	<i>-----</i>	
<i>GSC</i>	<i>GEODYN</i>	<i>-----</i>	

Inasan indiv combination (2005, new sat models)

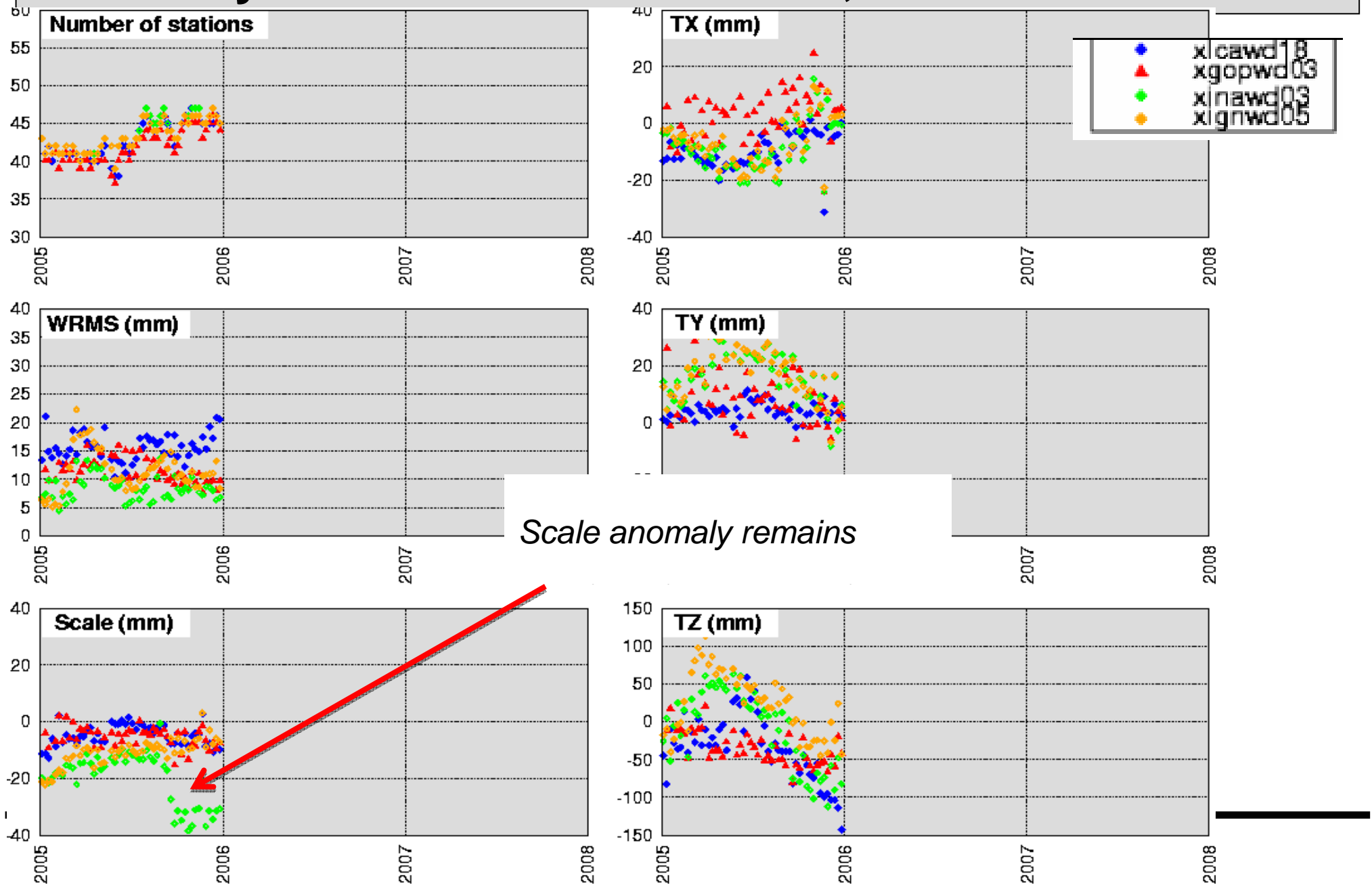


Old models (2005-2007)

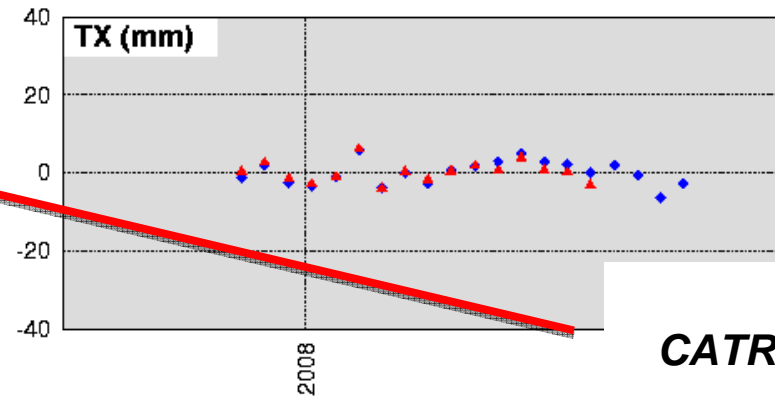
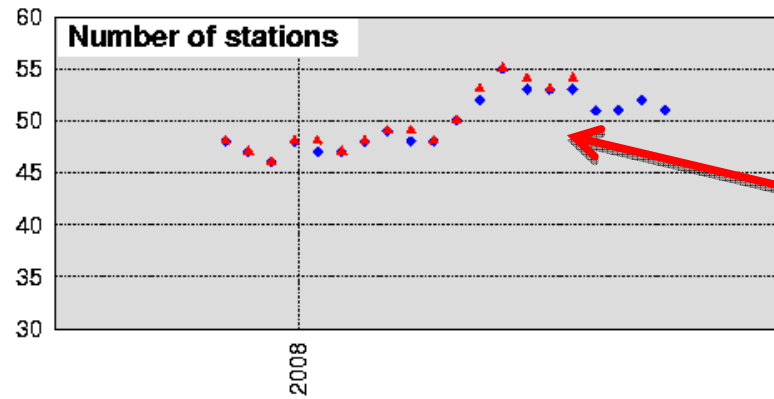


List of outliers & pb with solutions available

Weekly comb. Inasan with 2005, new sat models

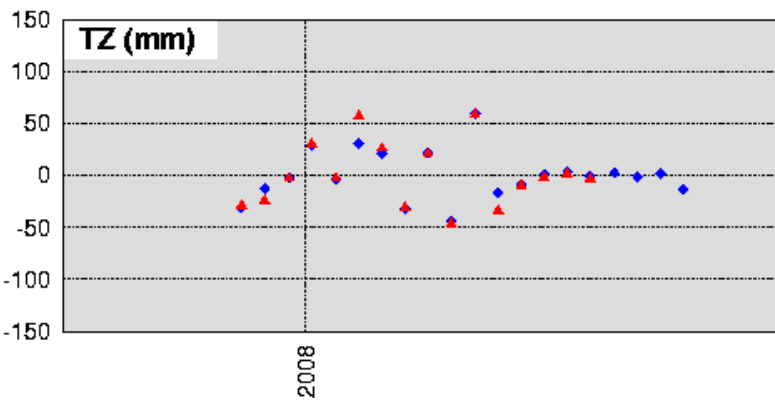
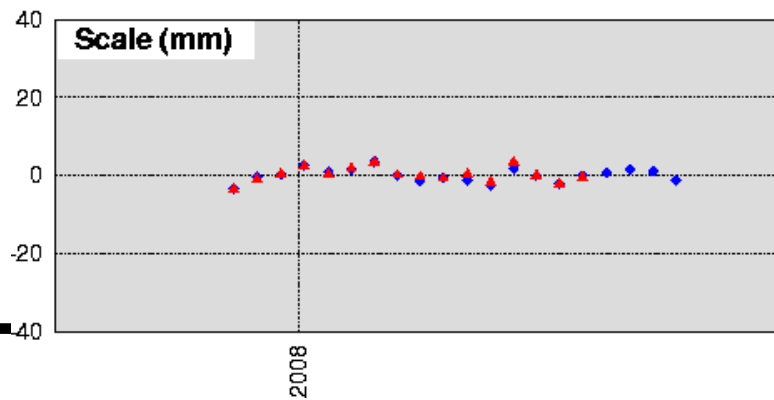
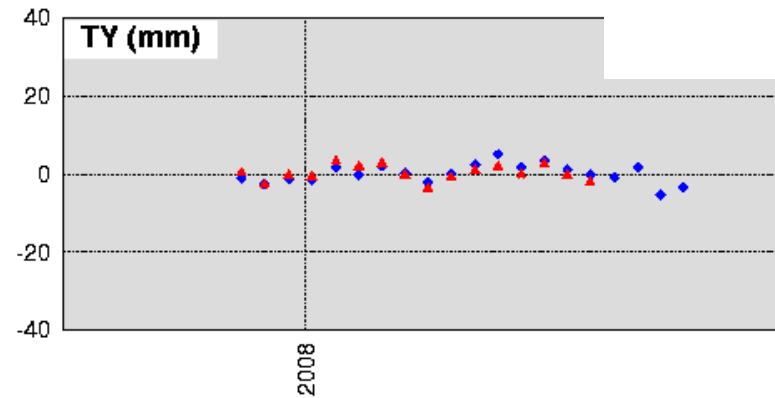
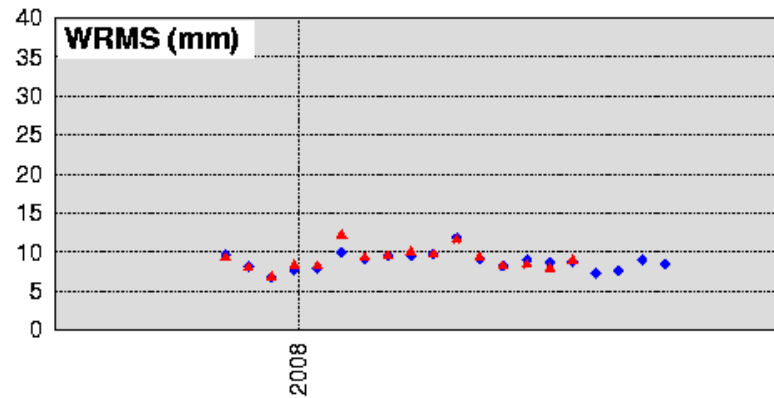


Lca SINEX with/without atmopsh. Loading



◆ with
▲ without

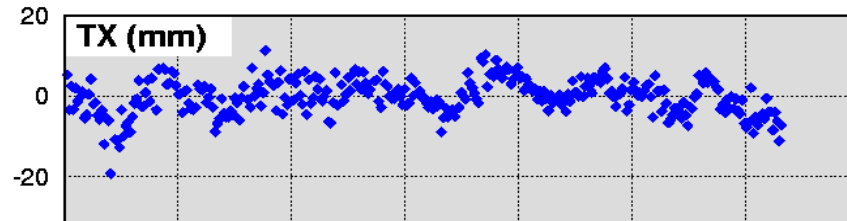
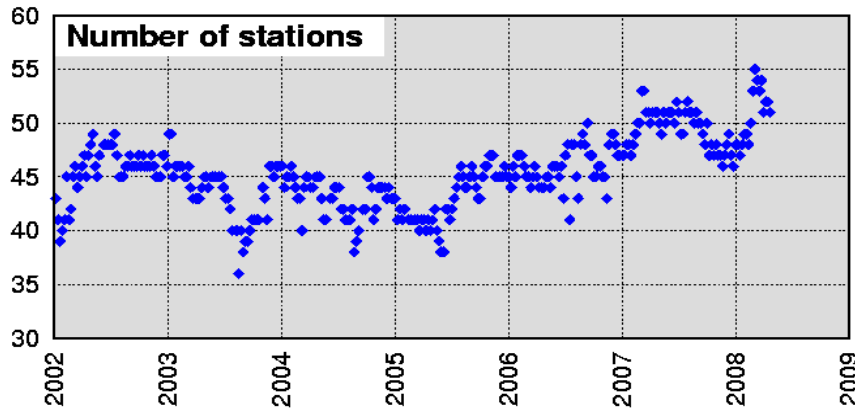
*not strictly the same
 CATREF preprocessing (!)
 Doesn't seem
 significant*



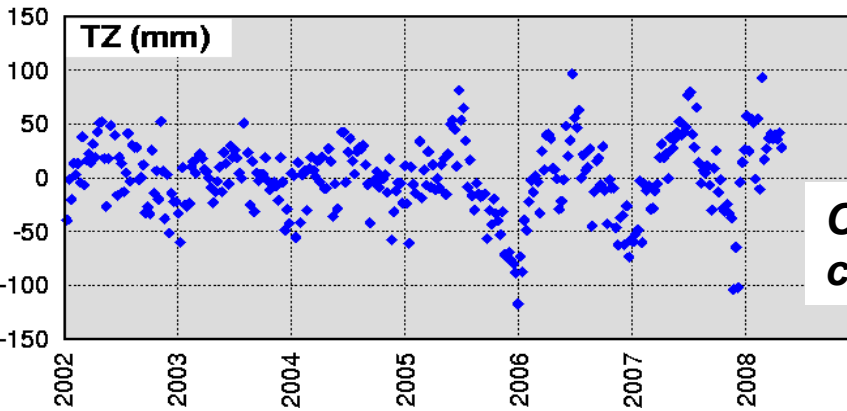
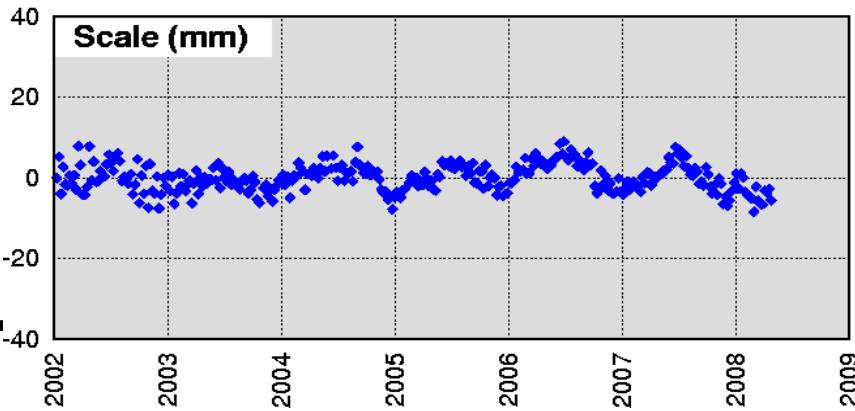
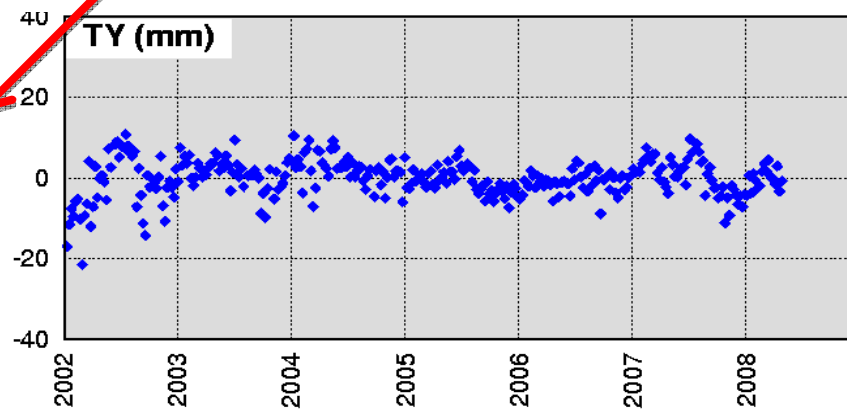
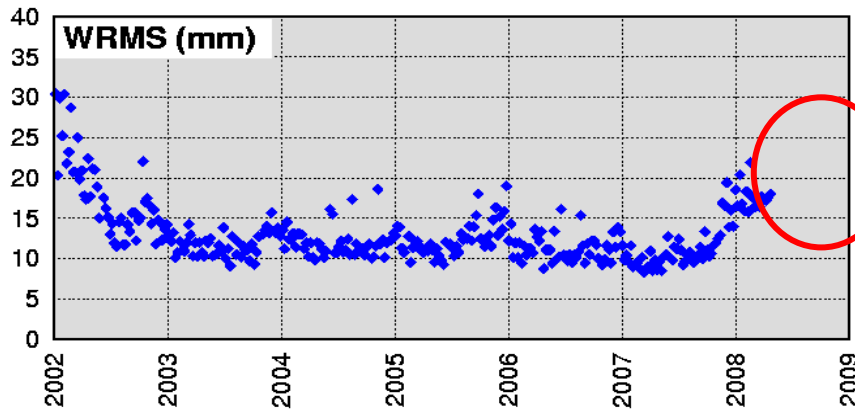
Dec. 07 – March 08

1 2008

Lca recent SINEX validation (recent changes)

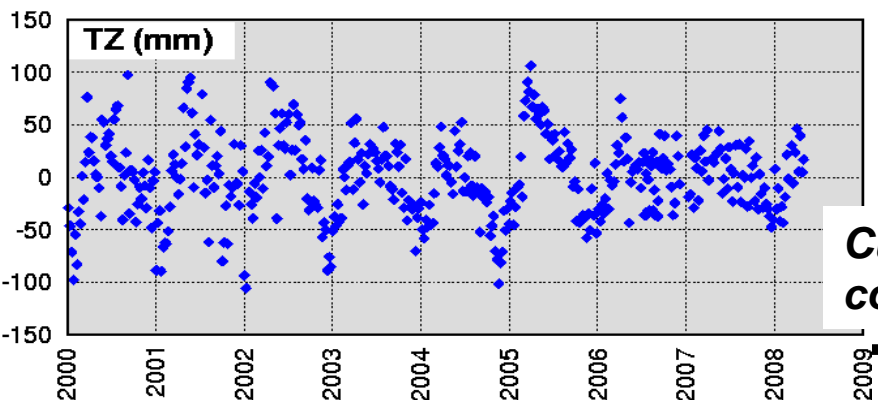
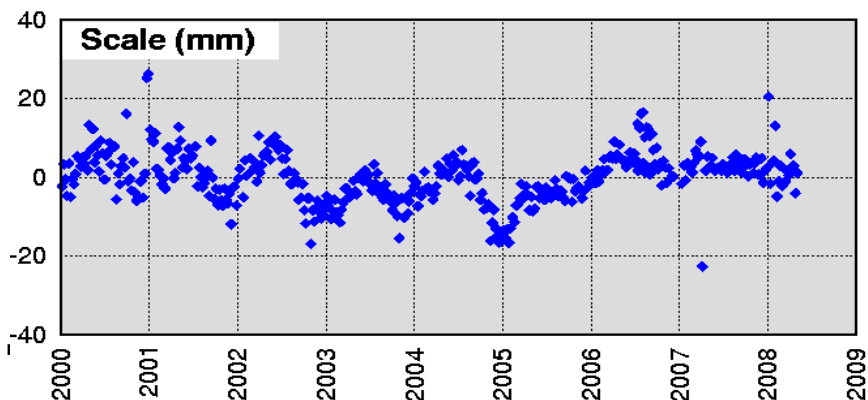
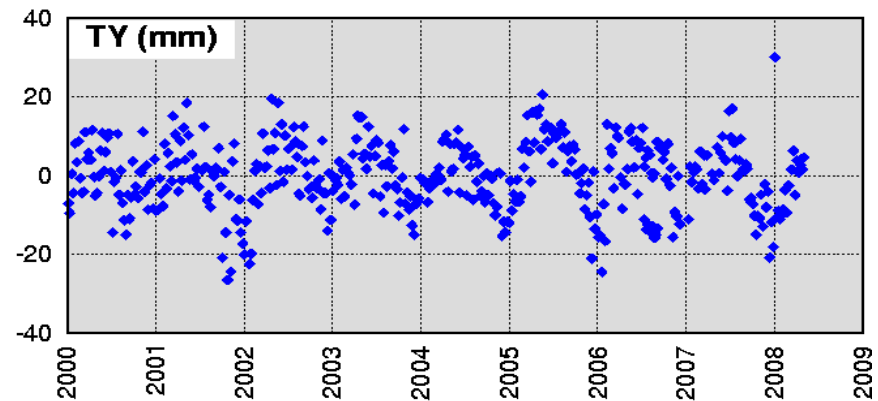
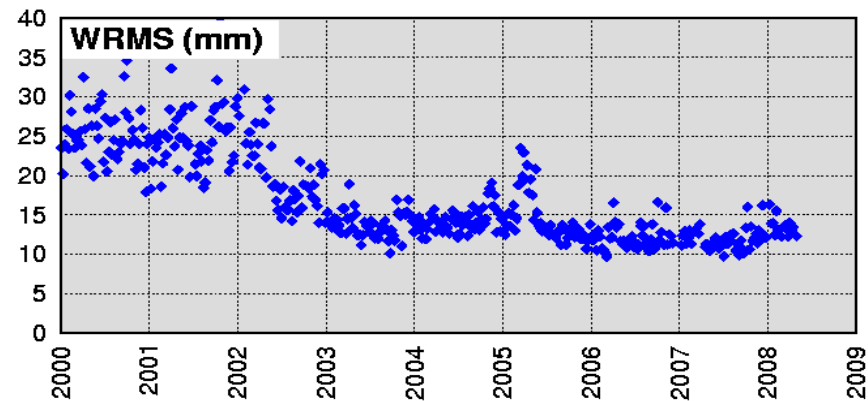
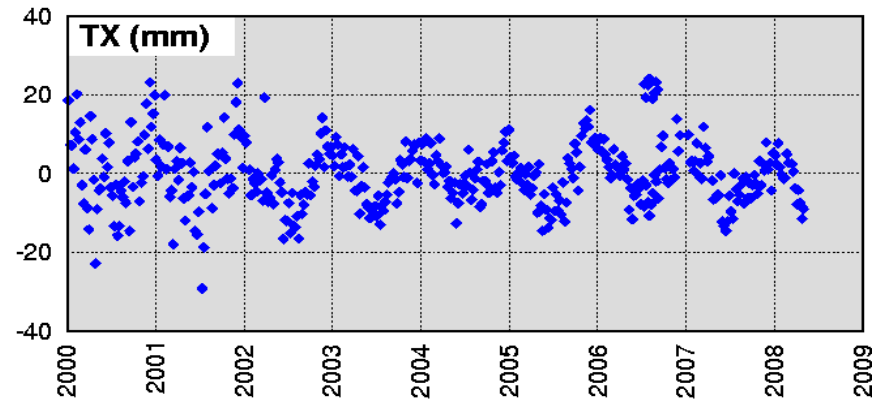
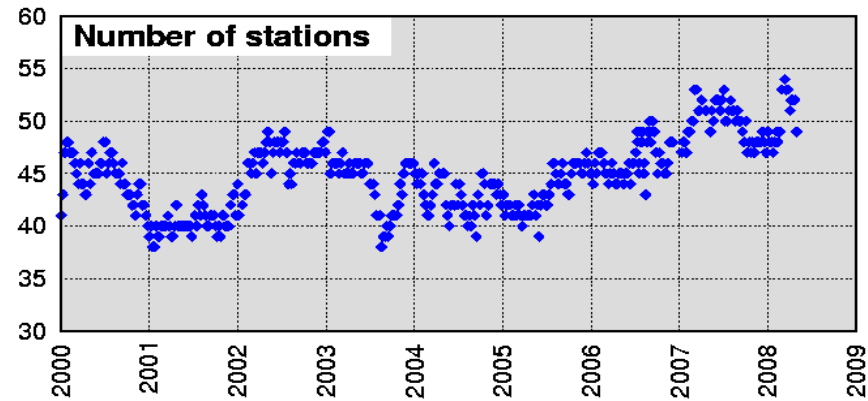


Dec 9, 2007 : correction in Envisat attitude law
March 3, 2008 : SLR CoP correction for Envisat



Cumulative combination

IGN recent SINEX validation (same strategy)



Cumulative combination

Combination of 4 individual cumulative solutions

<u>AC</u>	<u>data span</u>
IGN	2000- 2008
LCA	2005-2008
GOP	2005-2006
INA	2005-2007

Versus ITRF2005
14 param.
Positions & Velocities (SINEX)

Solution	N	WRMS-Pos.			Epoch y	WRMS-Vel.			VF	MSF
		E	N	U		E	N	U		
		mm			mm/y					
gop.snx	55	10.7	6.5	8.0	5:354	6.3	5.5	5.8	0.91	8.58240
ign.snx	100	5.5	5.3	8.3	4: 62	2.1	1.3	2.3	0.88	10.01320
ina.snx	57	12.2	9.9	13.9	6: 1	21.9	27.8	31.8	0.93	8.53440
lca.snx	101	8.7	5.6	10.7	5: 61	3.5	2.2	3.3	1.16	11.78420

> **Comparisons to DPOD2005, to other techniques**

Future combinations and analysis

Strawman analysis schedule (to be discussed)

- *August : combination of 2003-April 2008*
- *Sept : combination of 1998-2003 (realistic?)*
- *up to end of Year ?...*

Iteration if new models/strategies are needed

- *since July*

Analysis of the combination products (continuation)

- *Per station*
- *Pos & velocities*

Derived from times series (weekly combin.) or directly (cumulative combin.) versus ITRF and other techniques at co-located sites

...