

Status of DORIS combinations

Future plans

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Summary

Nov 2007 (AGU) : CATREF processing strategy

March 2008: new deliveries

Analysis of combinations

- **individual cleaning**
- **weekly combinations**

(Per station analysis P. Yaya)

Future

- **production, ITRF2008**

Available solutions

<i>AC</i>	<i>software</i>	<i>data span</i>
<i>IGN</i>	<i>GYPSY/OASIS</i>	<i>2000- oct 2007</i>
<i>LCA</i>	<i>GINS/DYNAMO</i>	<i>2005-oct 2007</i>
<i>GOP</i>	<i>BERNESE</i>	<i>2005-2006</i>

loosely constraint, with var-cov and EOPs

CATREF Processing: 3 STEPS

STEP I: Per AC individual combination

STEP II: Combination of the 3 Acs cumulative solutions

STEP III: Weekly combinations

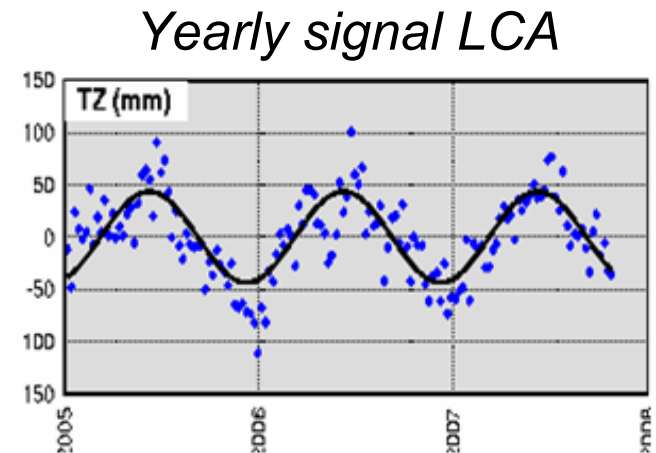
STEP I : Per AC Individual cumulative combination

Including:

- 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

Objectives:

- Estimation of internal consistency of the solutions
- SINEX cleaning before weekly combination
- Analysis of TRF discrepancies & temporal signature



STEP II : combination of the 3 cumulative solutions

Including :

- *IDS/ITRF2005 datum : sub-network with best σ (pos < 1 cm, vel < 2 mm/yr) and enough obs. (80% of time)*
- *14 parameters, weighting with variance factor of individual combination*

Objectives:

- *Pos./Veloc. for recent station (not in TRF2005)
MIAB SCRB MALB NOWB RIKB BETB*
- *Analysis of station discrepancies*

ITRF2005 comparisons	Pos (mm)	Vel (mm/yr)
IGN (7 yrs)	6.5	2.0
LCA (2 yrs)	15.6	4.0
GOP (2 yrs)	11.1	7.1
Combined solution	7.0	5.7

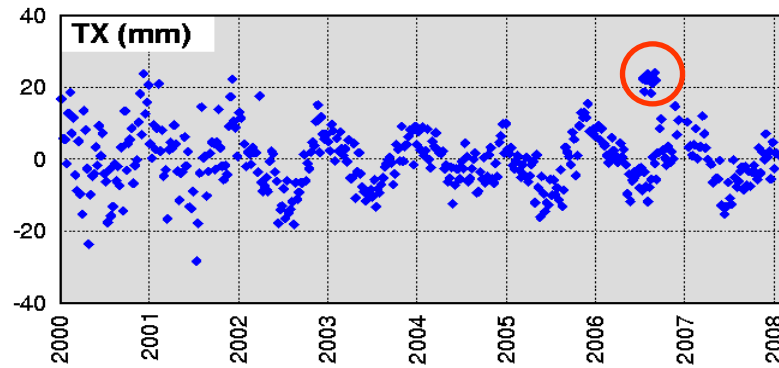
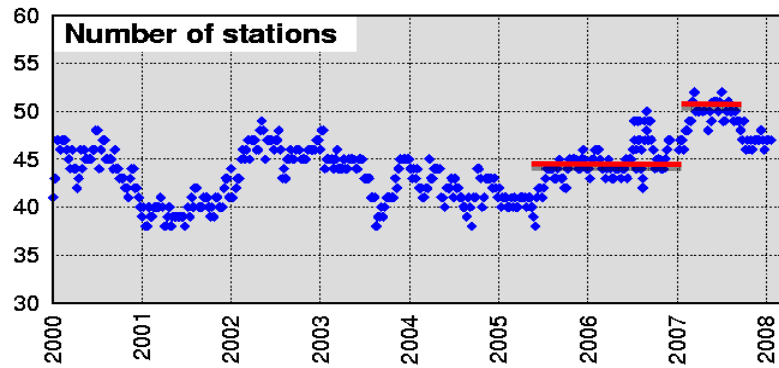
March08 : new deliveries

- New solutions

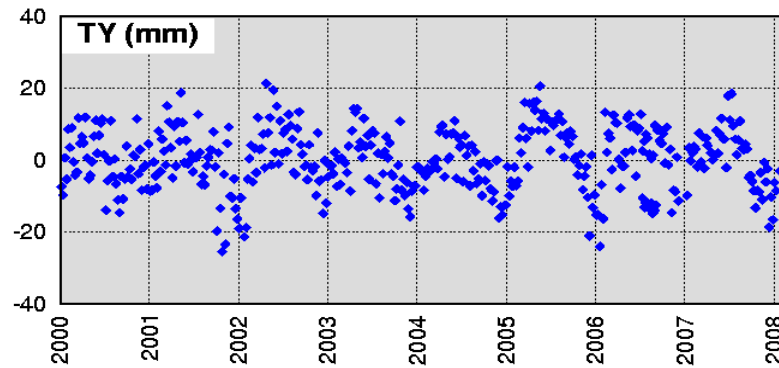
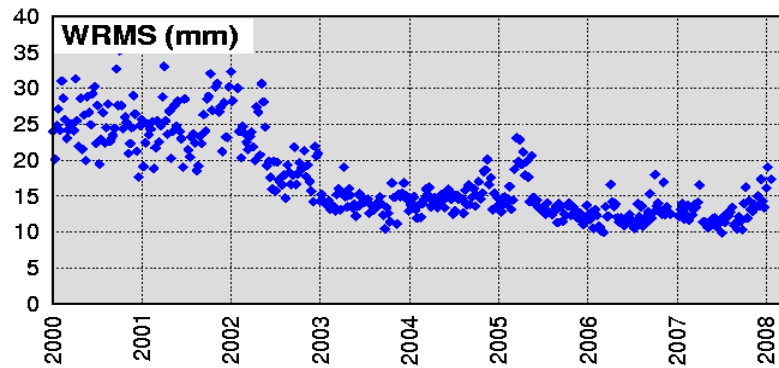
<i>AC</i>	<i>software</i>	<i>Deliveries</i>
<i>IGN</i>	<i>GYPSY/OASIS</i>	<i>weekly (operational)</i>
<i>LCA</i>	<i>GINS/DYNAMO</i>	<i>weekly (operational) + 2002-2004 (last week)</i>
<i>GOP</i>	<i>BERNESE</i>	<i>-----</i>
<i>GSC</i>	<i>GEODYN</i>	<i>(operational TBC) + 2005-2007 (last week)</i>

- Update CATREF version
 - Easier managt of solution # (soln in estimate block)

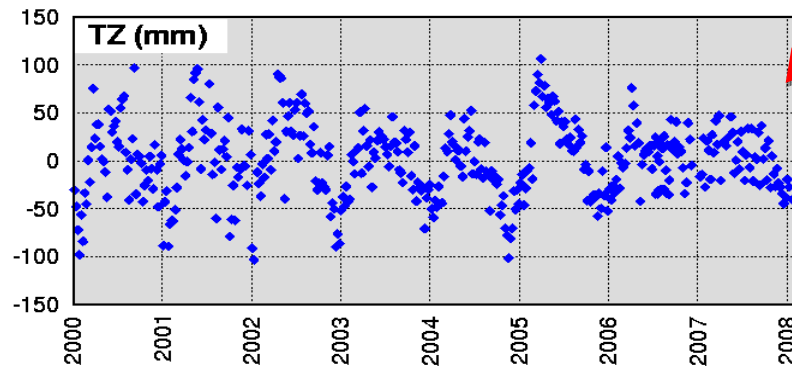
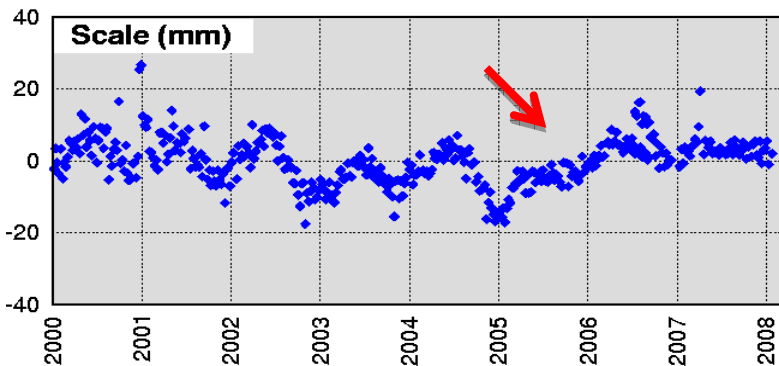
Individual cumulative combination: IGN



2000-2007



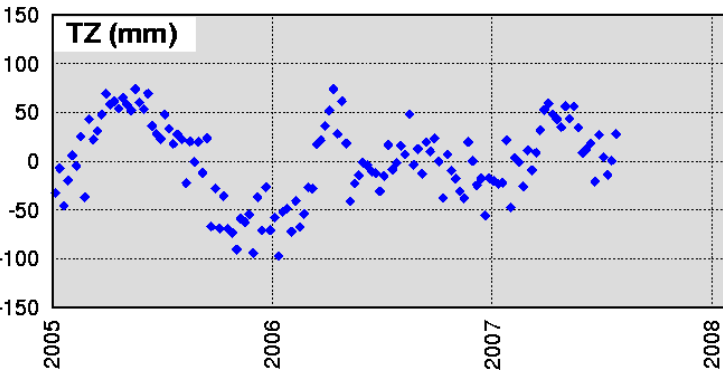
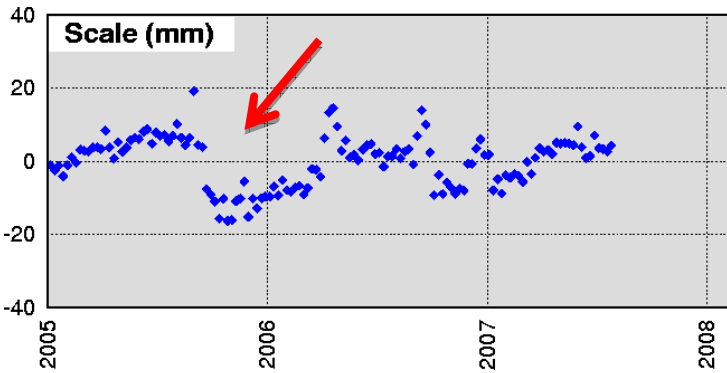
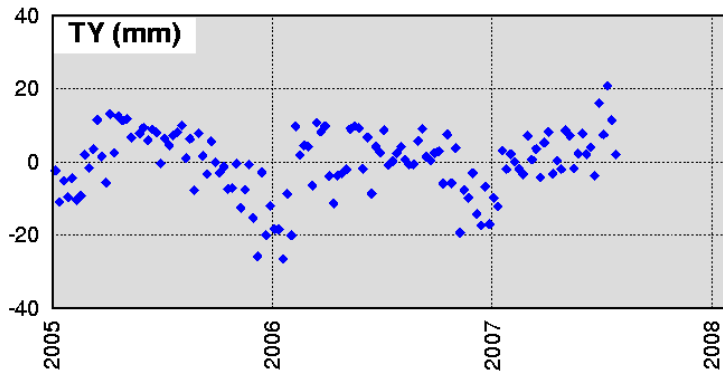
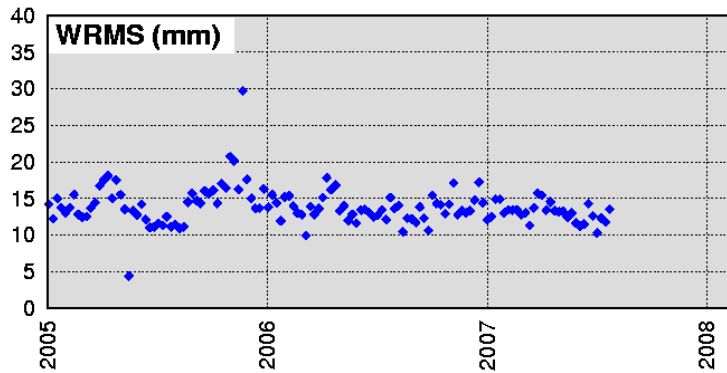
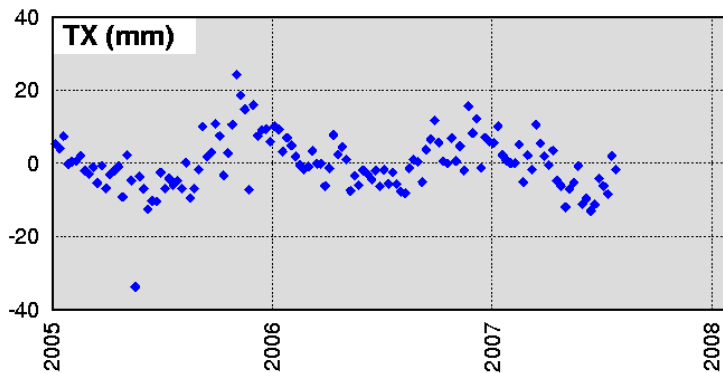
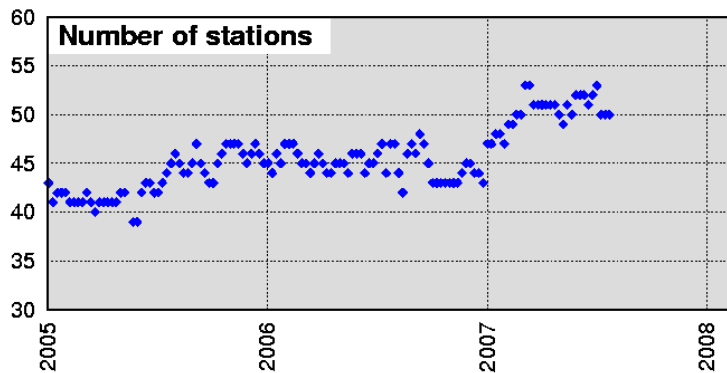
The yearly signal disappears



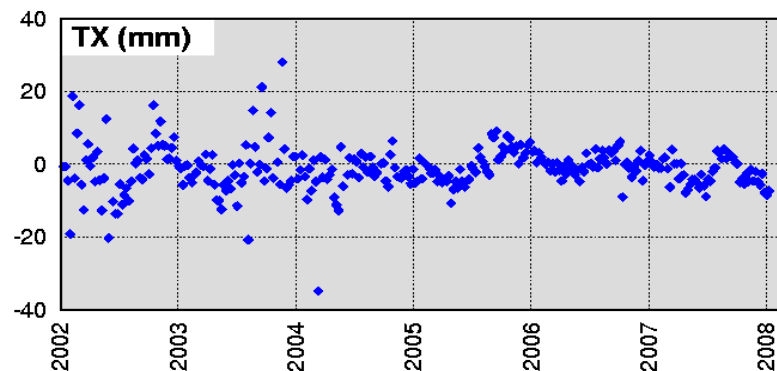
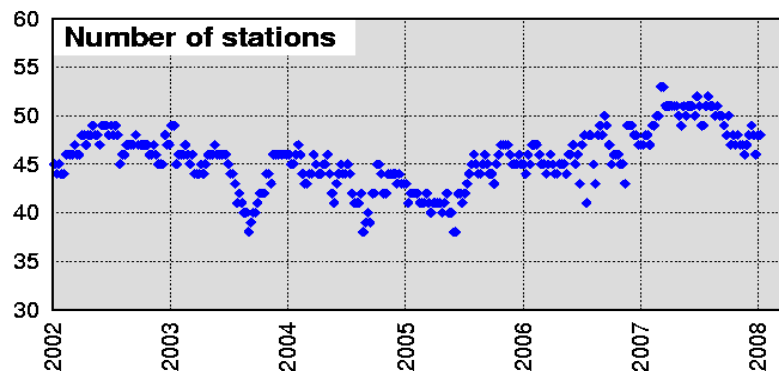
Individual cumulative combination: INASAN (ina)

2005-2007

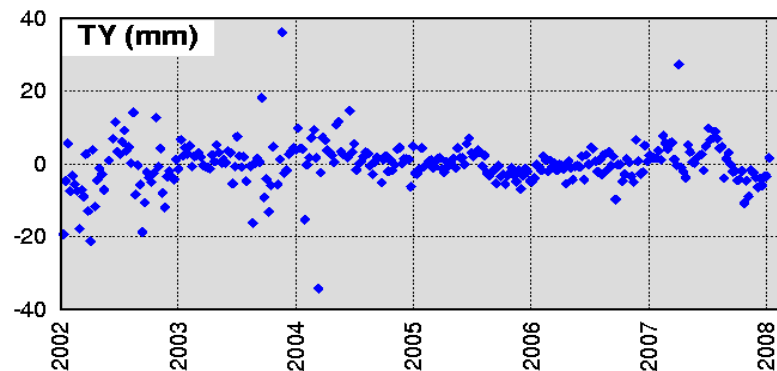
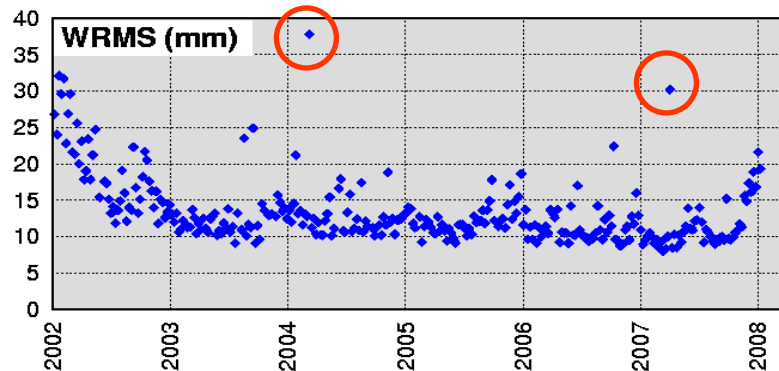
-similar to ign



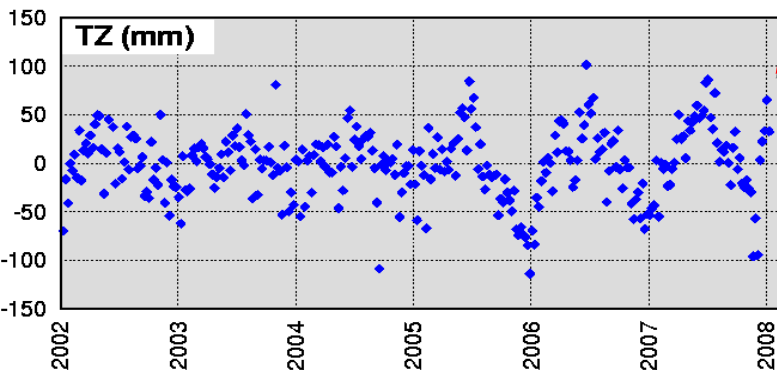
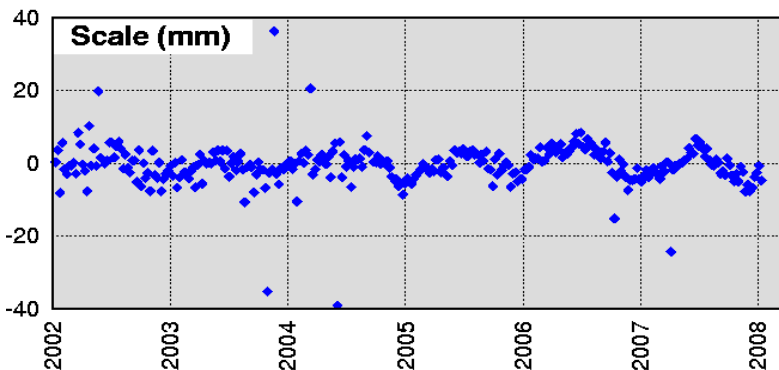
Individual cumulative combination: LEGOS/CLS (Ica)



2002-2007

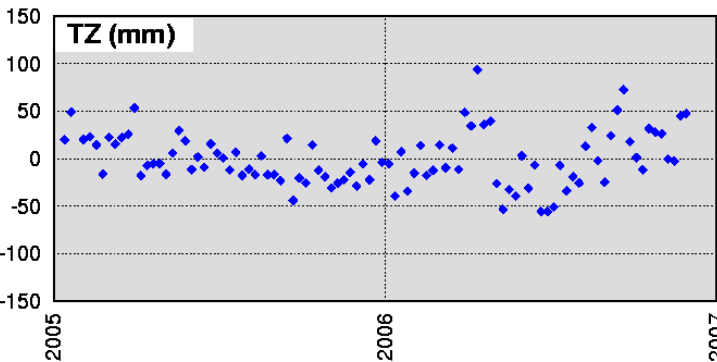
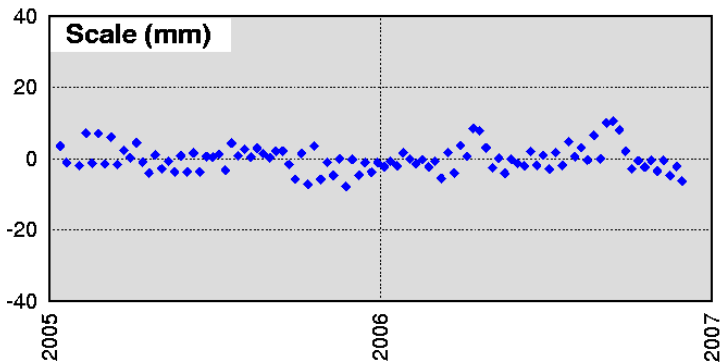
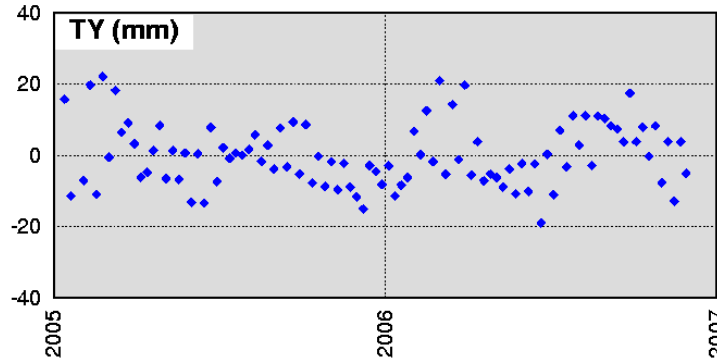
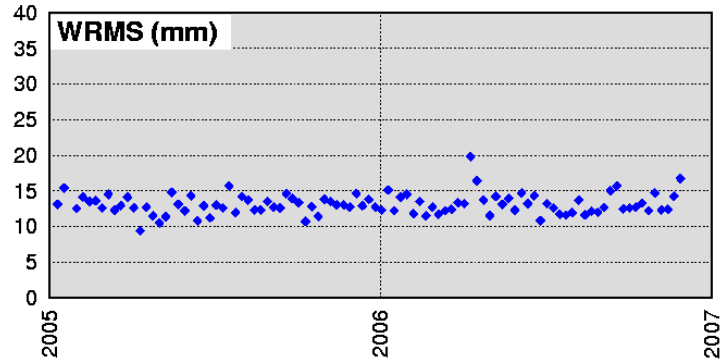
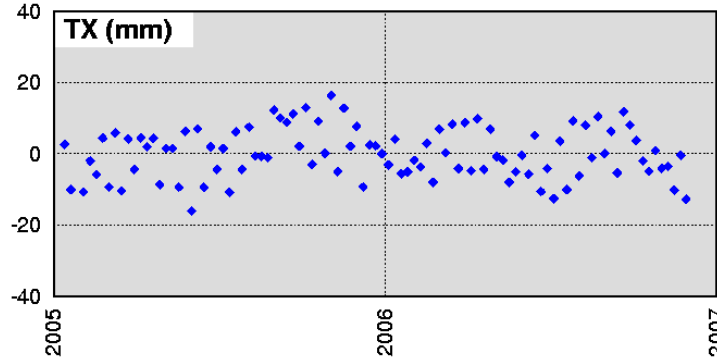
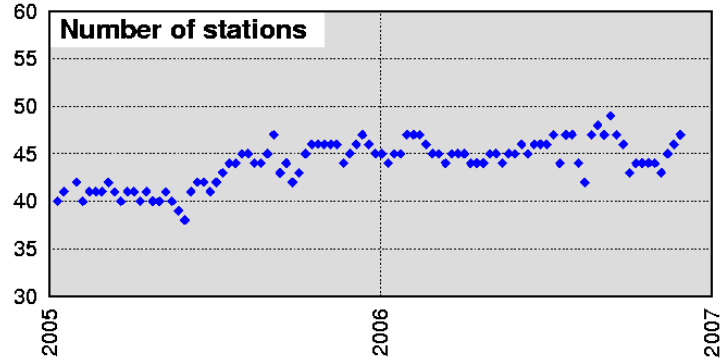


- cleaning not finalized



a yearly signal appears

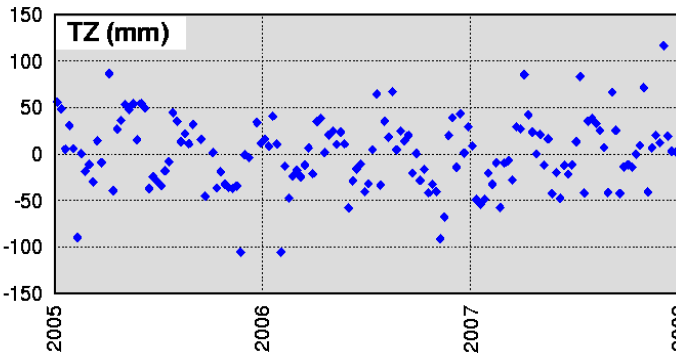
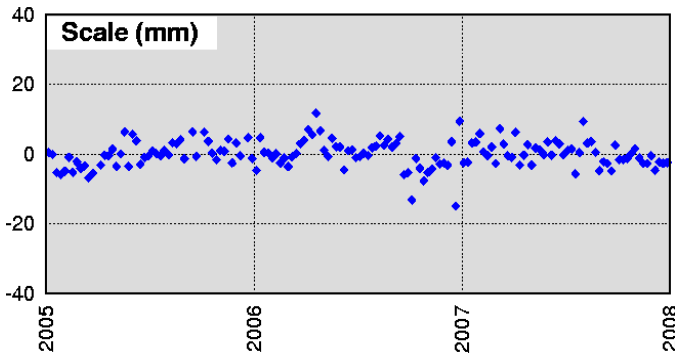
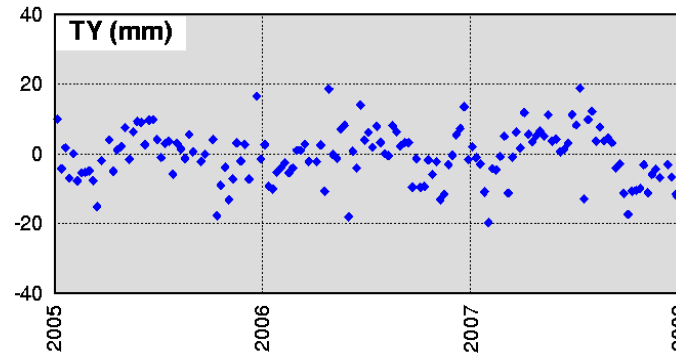
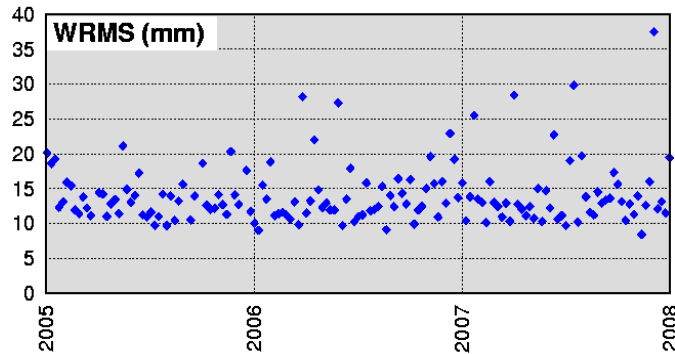
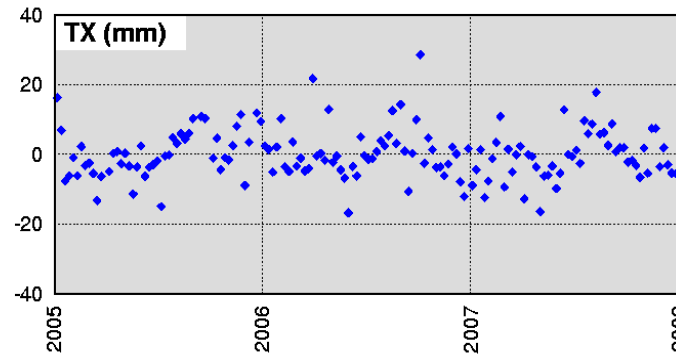
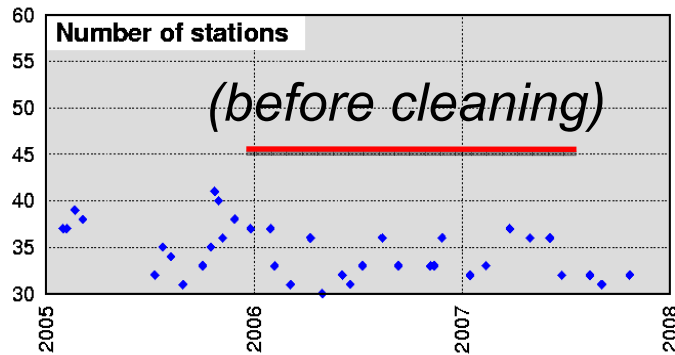
Individual cumulative combination: Pecny Obs. (gop)



2005-2007

- coherent
- small wrms

Individual cumulative combination: Geos. Aust (gsc)



2005-2007

(Preliminary results)

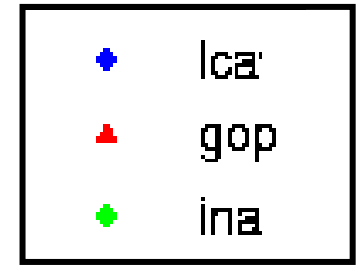
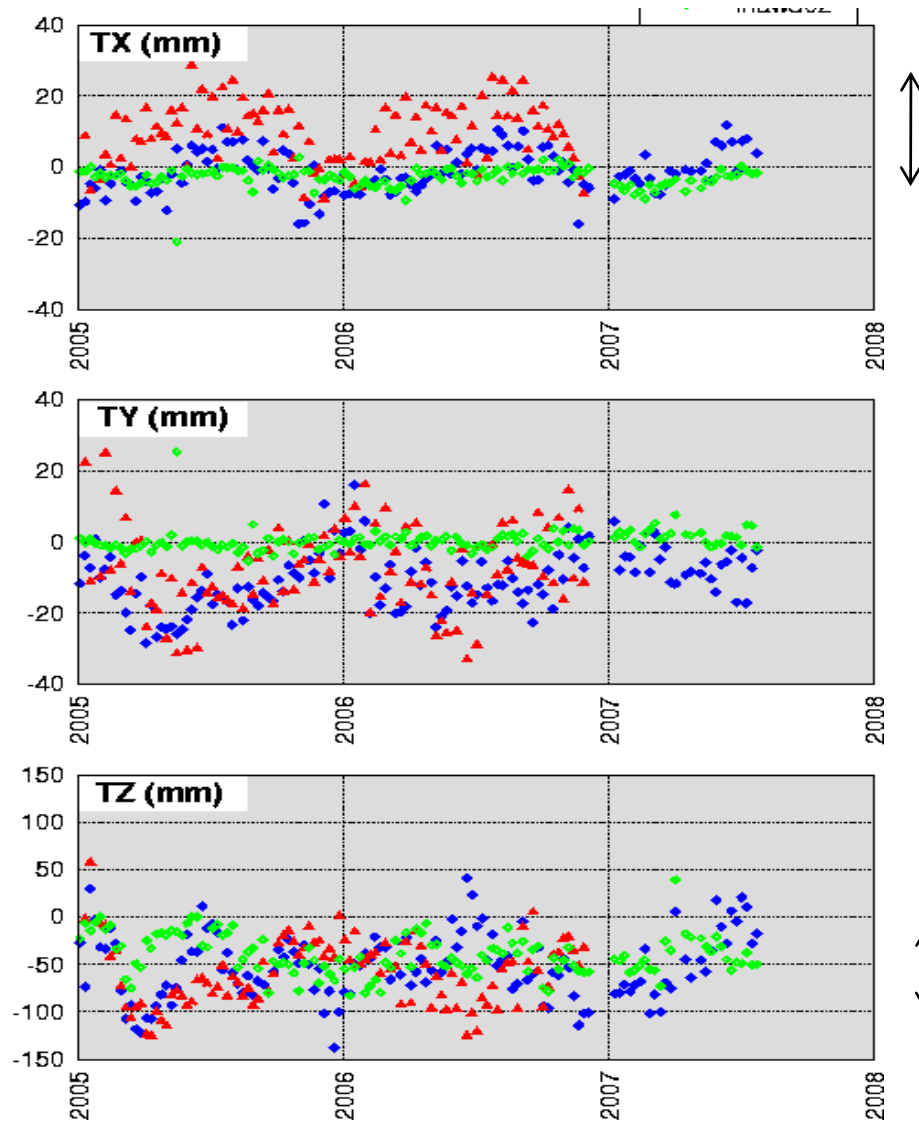
-Pb with many stations at projection and combination levels

- Coherent wrms

STEP III: weekly combination

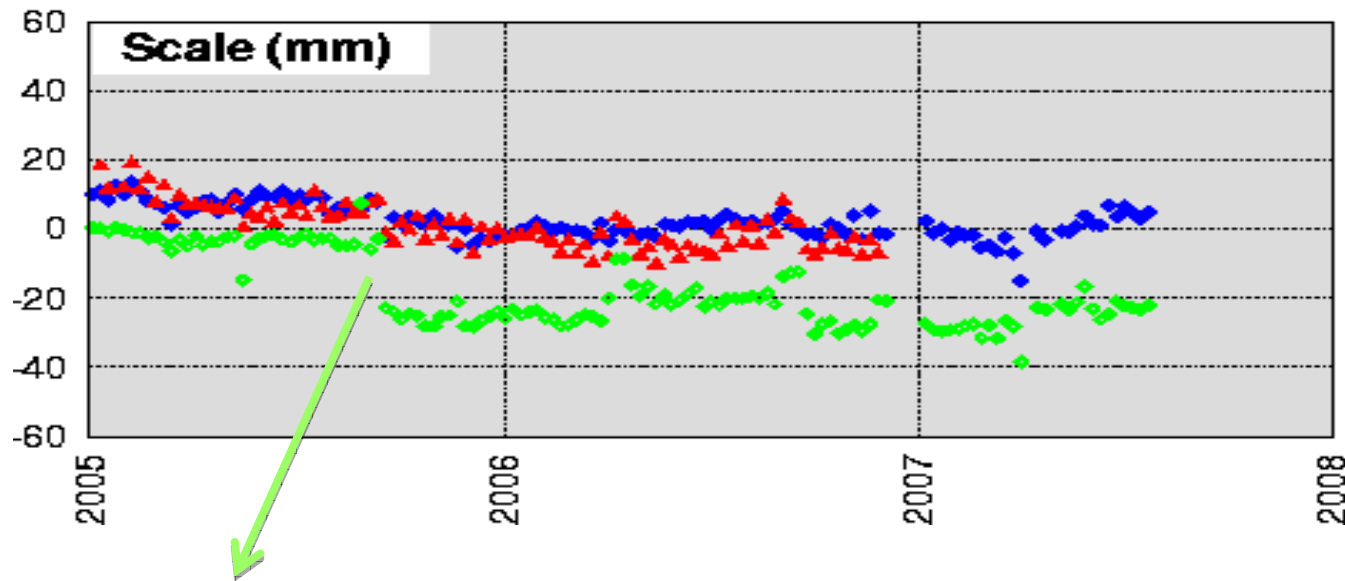
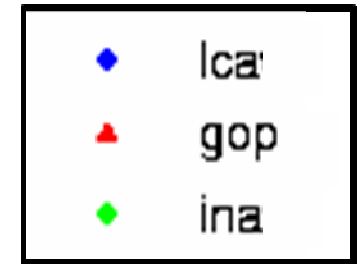
- 4 ACs: gop,lca,ign,ina
- Period : 2005-2007
- Iteration after multiplying σ_0 by the estimated variance factors
- But differences with nov07 (AGU):
 - ina added
 - ign solutions are fixed

Weekly combinations: Translations



*TX, TY, TZ not centered
Versus ign*

Weekly combinations: Scale factor



ina strategy change?

Questions

- What about the TRF discrepancies?
 - $TZ > 10$ cm
 - Scale factor about 2-3 cm(also exist when combination with ITRF2005)

Future

Weekly combinations products

- Combination & analysis report
- Sinex
- Stcd and time series plot (strong users request)
- Transf parameters
- Ids.cls.fr + combination web page

Condition: at least 3 ACs operational (gsc, gop?)

Complementary analysis (per station, IGS solutions comparisons)

+ Work plan for ITRF2008 (TBD)