Status of the activities at the IDS Combination Center

G. Moreaux, F. Lemoine, L. Soudarin, and all ACs

Content
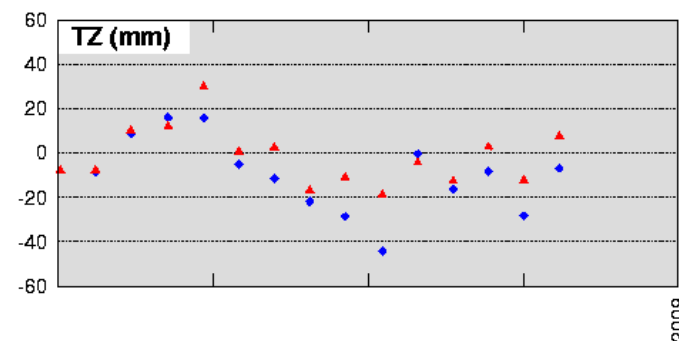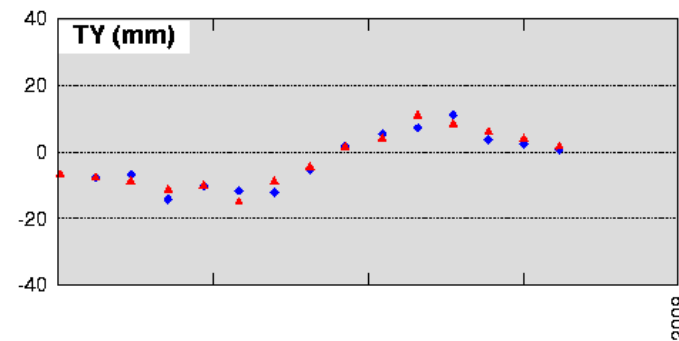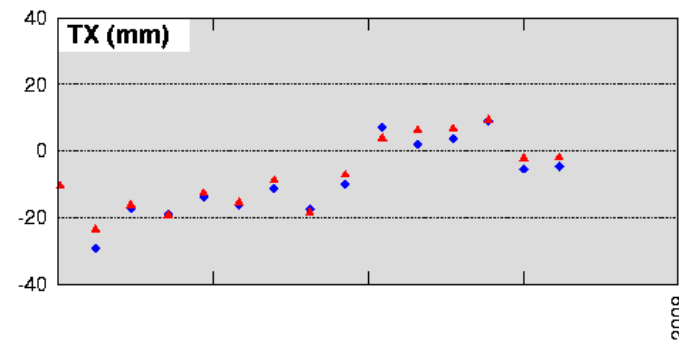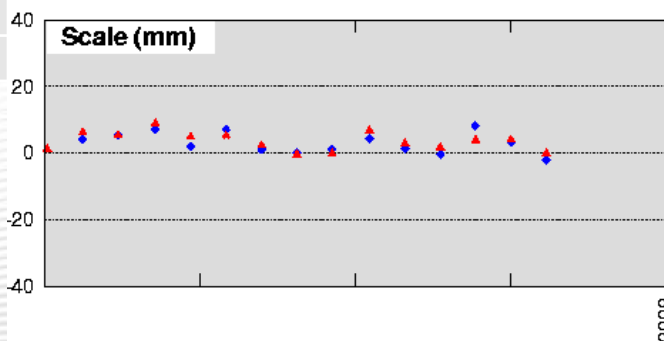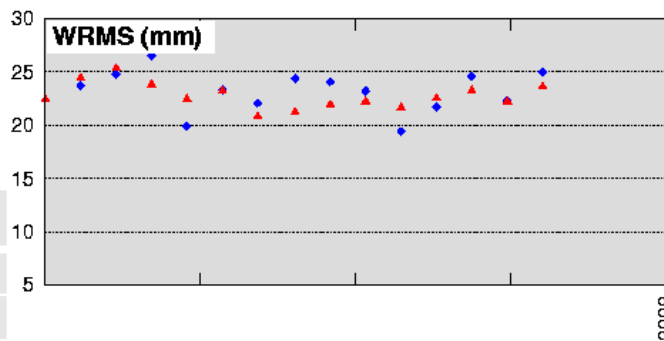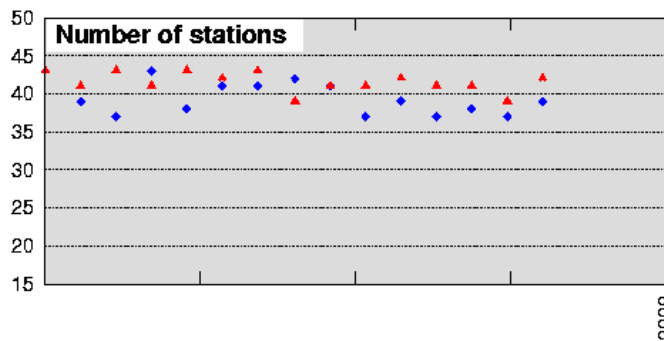
- New results on the IDS 2010 campaign

- First results on Cryosat-2 series

- Status of the IDS routine combination

IDS 2010 Campaign: Jason-2

Jason-2 2DFCs / Jason-2 7DFCs (Dual Frequency Channel)

Statistics from 2008 doy 251
to 2008 doy 342 (mean/std)

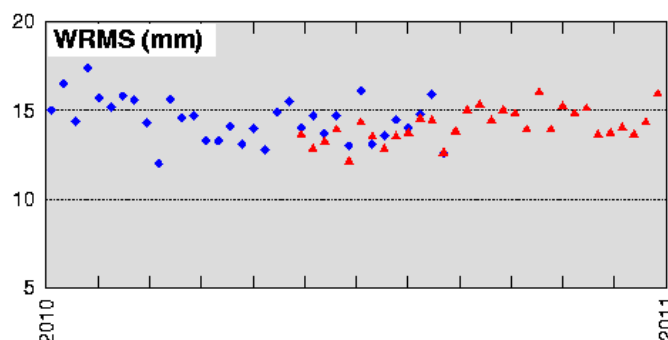|	2 DFCs	7 DFCs
Scale	-2.97 / 3.09	3.47 / 2.80
Tx	-8.80 / 11.21	-7.31 / 10.90
Ty	-2.61 / 8.10	-2.38 / 8.29
Tz	-10.03 / 17.27	-1.54 / 13.40

➡ Tz takes benefits of 7 DFCs
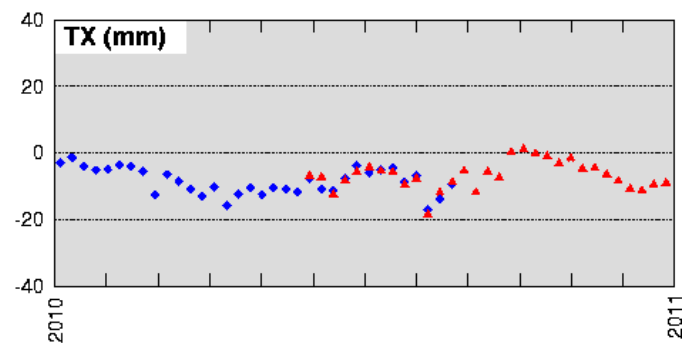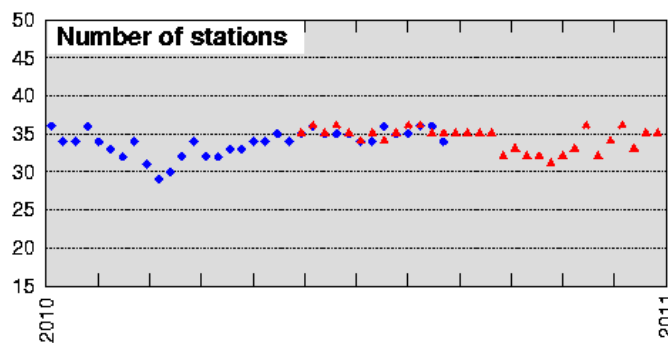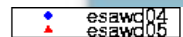
- 3 series with Cryosat-2 included : ESA (05), IGN (08) and LCA (27)

- Combined solutions : Spot4, Spot5, Envisat, Jason-2 and Cryosat-2

- Last 6 months of 2010

Cryosat-2: ESA series

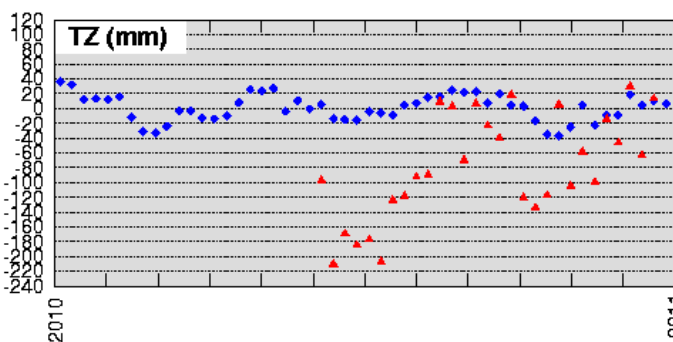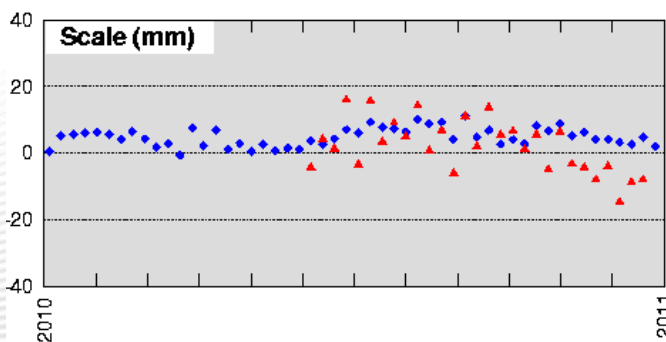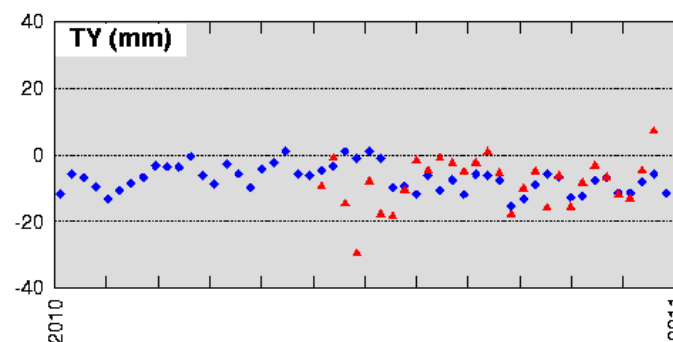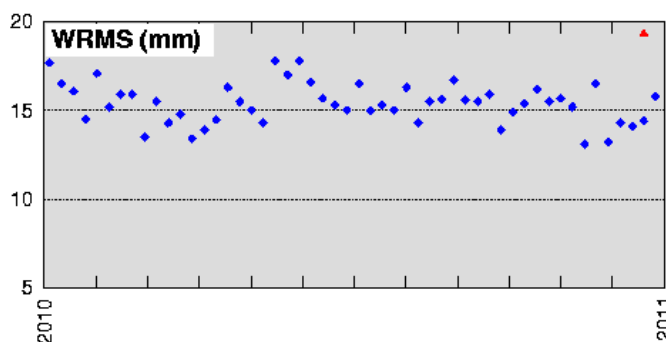esa 04 (without Cryosat-2) / esa 05 (Cryosat-2 included since doy 150)

esawd04
esawd05
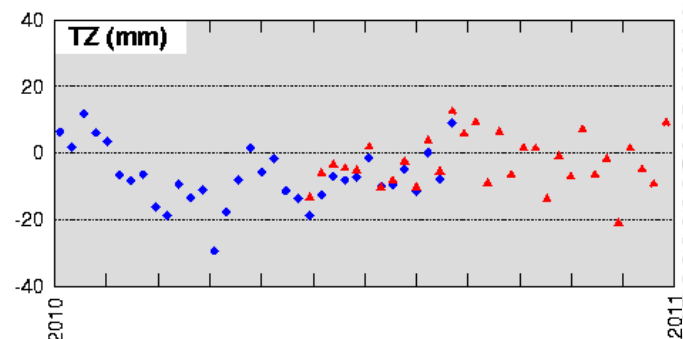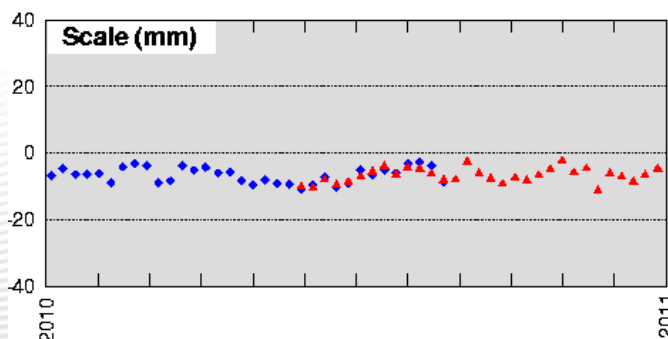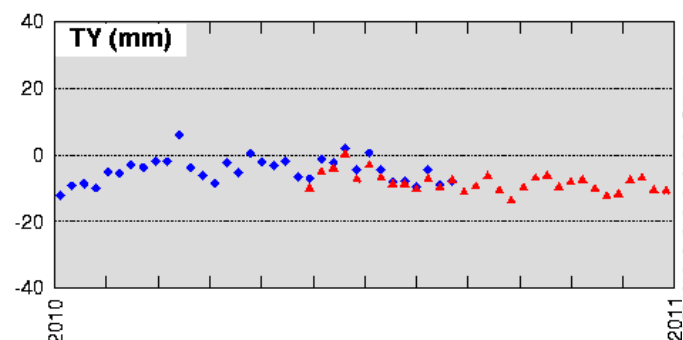
Statistics from 2010 doy 150
to 2010 doy 234 (mean/std)

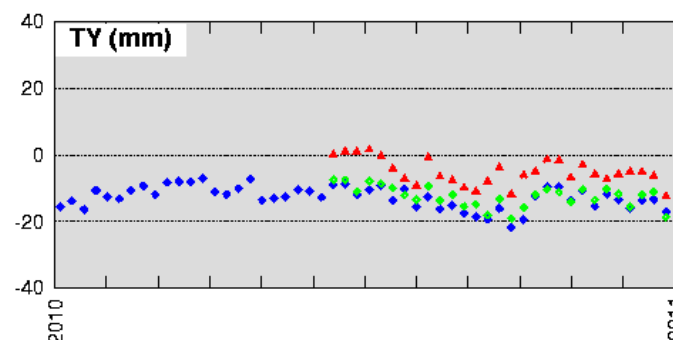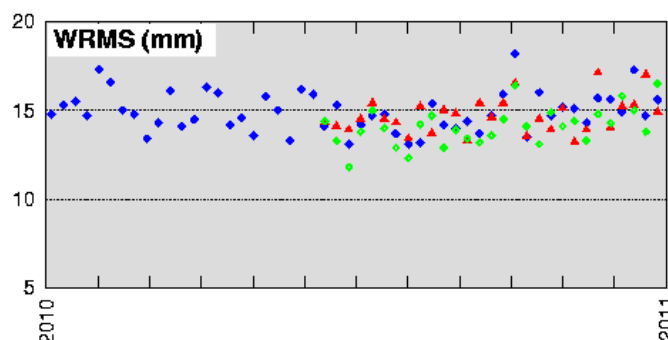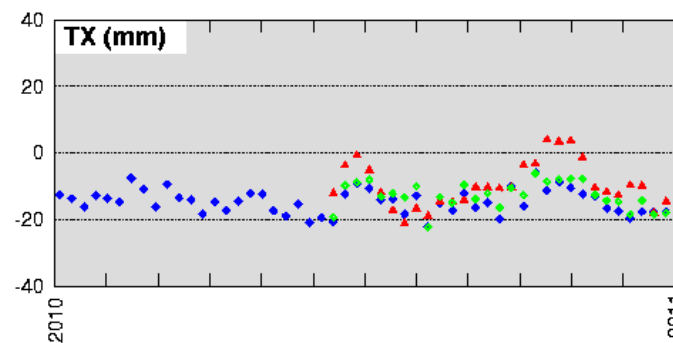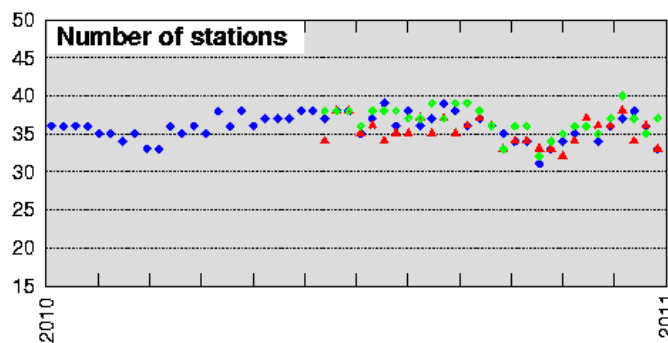|	04	05
Scale	-6.84 / 2.76	-7.36/ 2.22
Tx	-8.71 / 3.84	-8.82/ 3.81
Ty	-4.98 / 3.76	-7.01/ 3.09
Tz	-6.98 / 6.79	-4.17 / 6.84

Cryosat-2: IGN series

ign 01 (Cryosat-2 included since doy 150) / Cryosat-2 only solution
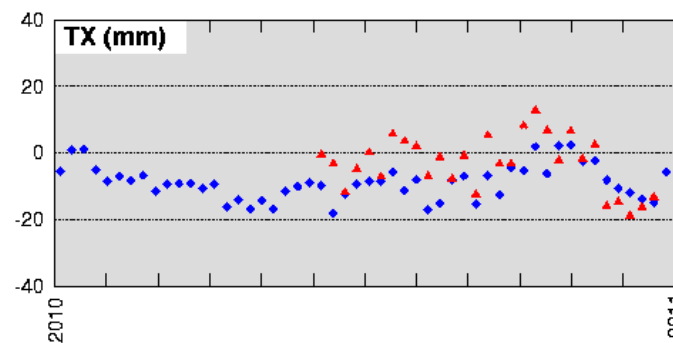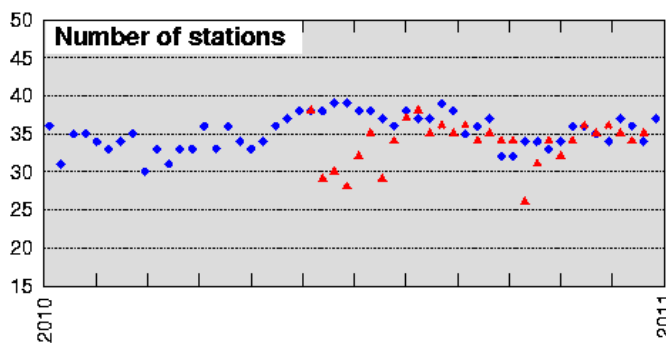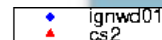
Cryosat-2: LCA series

lca 26 (without Cryosat-2) / lca 27 (Jason-2 and Cryosat-2 only) / lca 28 (Cryosat-2 included)

cawd26
cawd27
cawd28
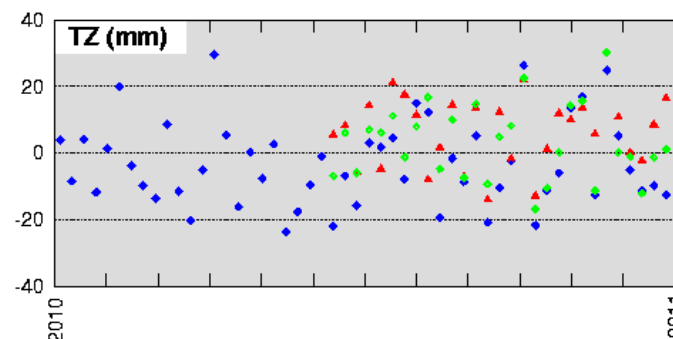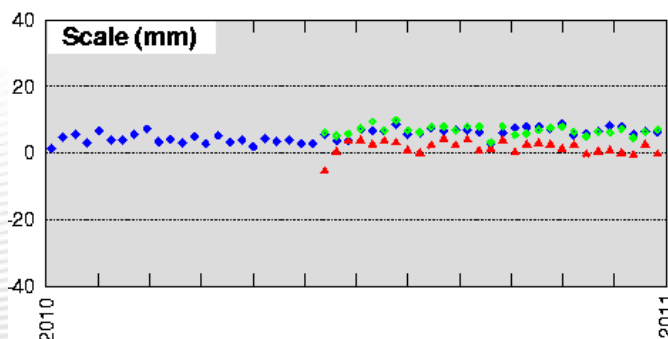
Statistics on last 6 months of 2010 (mean/std)

	26	27	28
Scale	6.33 / 1.55	1.35 / 2.02	6.71 / 1.40
Tx	-14.86 / 4.01	-9.73 / 6.90	-12.78 / 4.04
Ty	-13.84 / 3.48	-5.29 / 3.89	-12.44 / 3.15
Tz	-2.70 / 13.24	6.87 / 11.79	3.00 / 11.20

Cryosat-2: ESA, IGN and LCA combined series
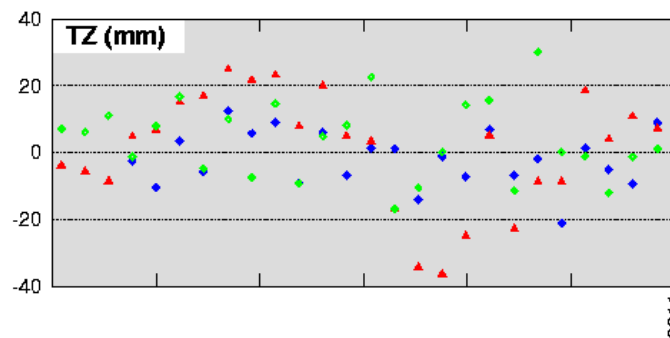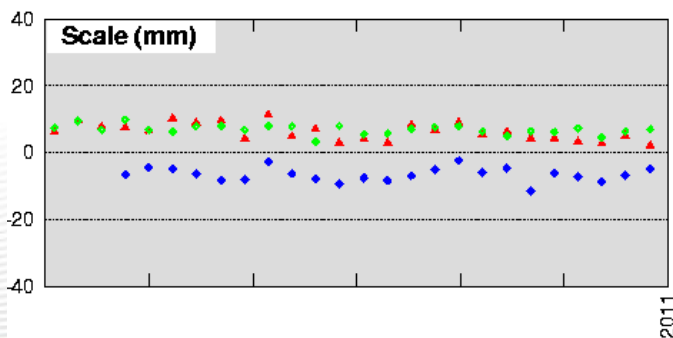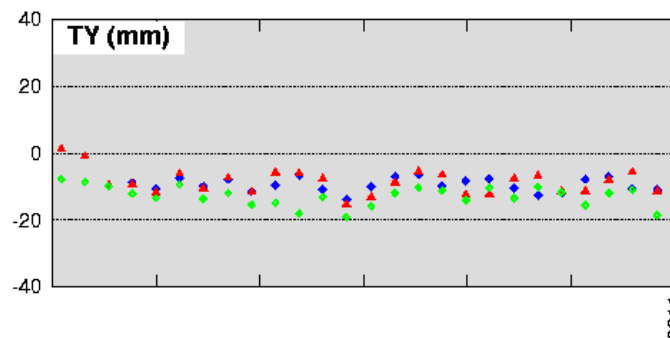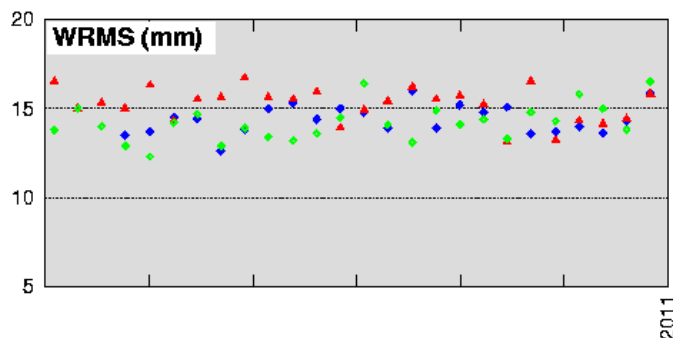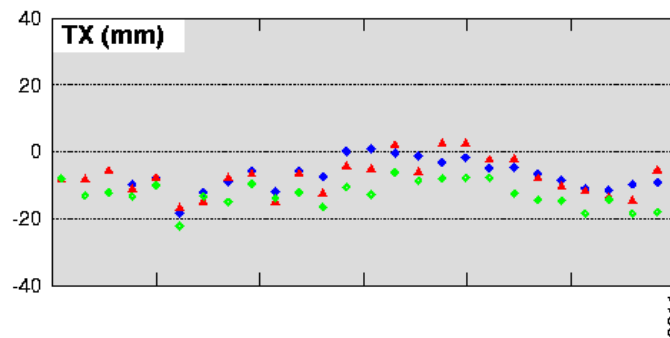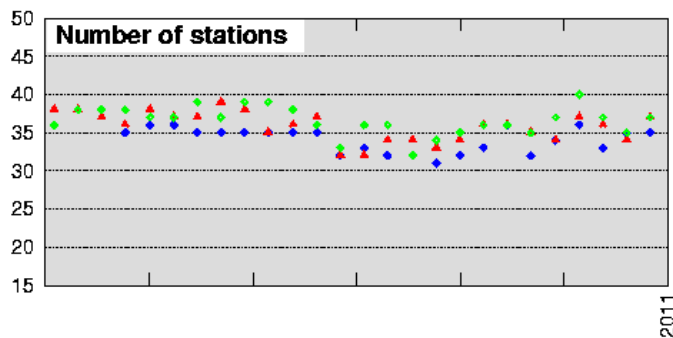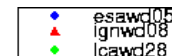
Cryosat-2: first conclusions

- No problem with the integration of Cryosat-2 for ESA, IGN and LCA

- Cryosat-2 has no big impact on combined solutions

- Impact on polar stations coordinates ?

Routine Combination

- ## Functional scheme
  - Each three months, all the ACs deliver three months of weekly SINEX solutions
    All updated solutions available are used (no criteria on missions included)
  - Evaluation step of all individual combined solutions
  - Weekly combination
  - Evaluation of the combination

- ## Status of the routine combination
  - First version of combination from begin of 2009 to end of 2010
  - Needs some functional improvements
  - Some utilities have still to be developped (ex: generation of a delivery report)

...

ACs series status

	Satellites						Period
	Cryosat-2	Envisat	Jason-2	Spot2	Spot4	Spot5	
esa04		x	x	x	x	x	08.195-10.234
esa05	x	x	x		x	x	10.150-11.100
gau09		x	x	x	x	x	08.195-10.290
gop32		x	x	x	x	x	09.011-10.353
gsc11		x	x	x	x	x	09.004-10.360
ign08	(x)[10.150]	x	x	x	x	x	93.003-11.100
ina07		x		x	x	x	93.003-10.353
lca26		x	x	x	x	x	08.363-11.079
lca27	x	x	x		x	x	10.164-11.079

Status on may 17, 2011

Routine Combination

- ## 2009 doy 001 → 2010 doy 143

  esa 04 + gau 09 + gop 32 + gsc 11 + ign 08 + ina 07 + lca 26

- ## 2010 doy 150 →2010 doy 157

  esa <u>05</u> + gau 09 + gop 32 + gsc 11 + ign 08 + ina 07 + lca 26

- ## 2010 doy 164 → 2010 doy 360

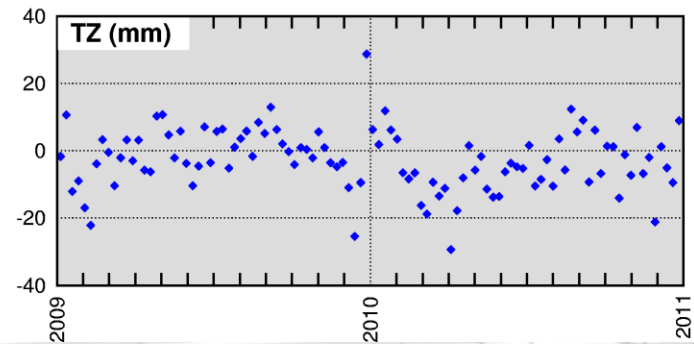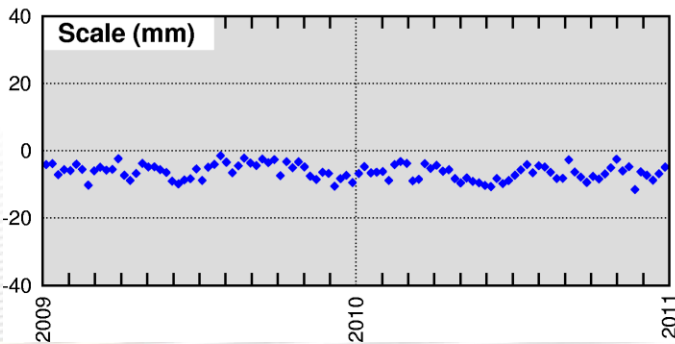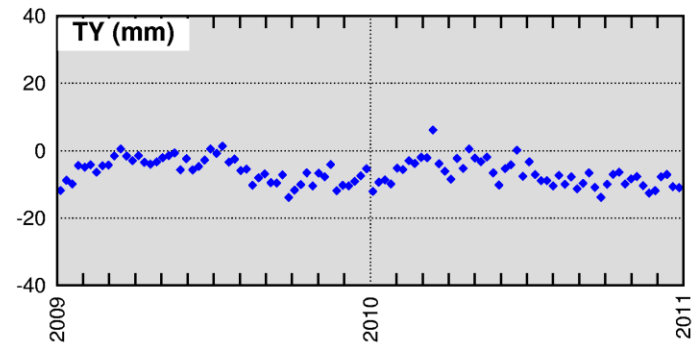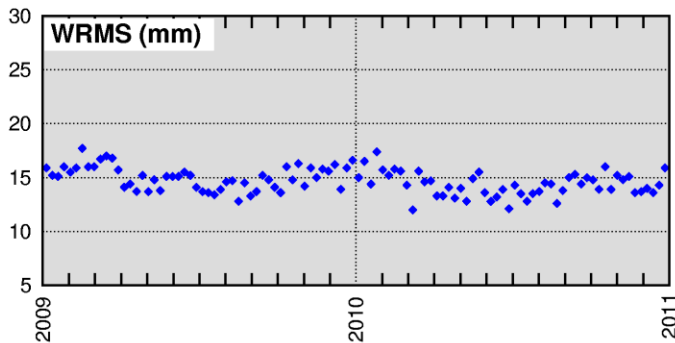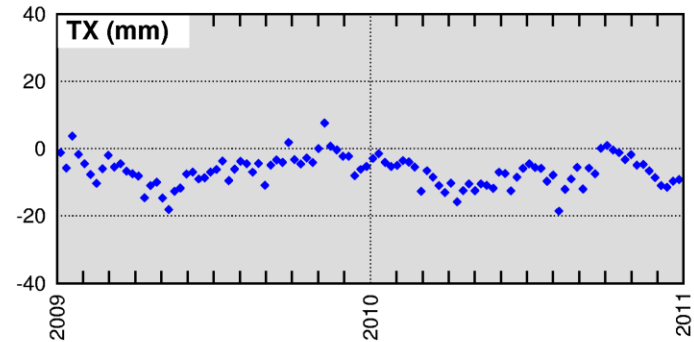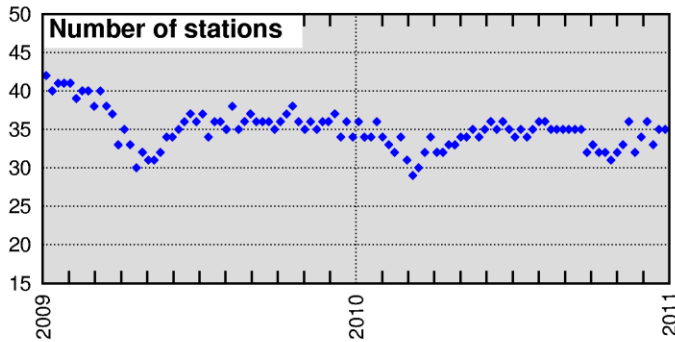 esa 05 + gau 09^{290} + gop 32^{353} + gsc 11 + ign 08 + ina 07^{353} + lca <u>28</u>

esa05 = esa04 + Cryosat-2

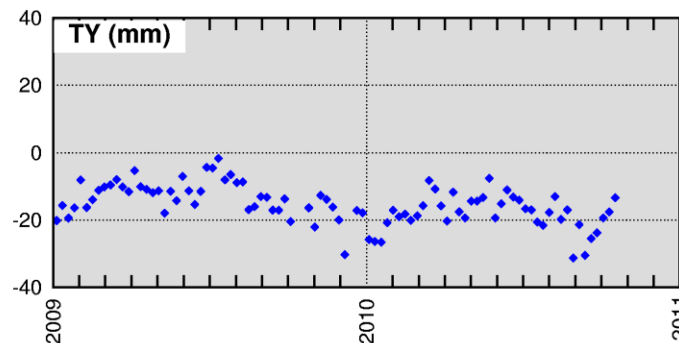lca28 = lca26 + Cryosat-2

Since 2010 doy 150 ign01 inludes Cryosat-2
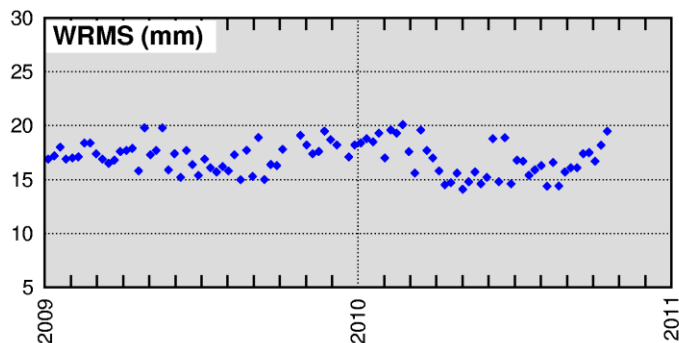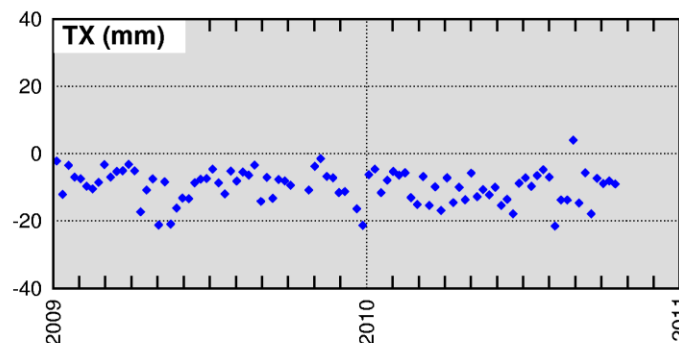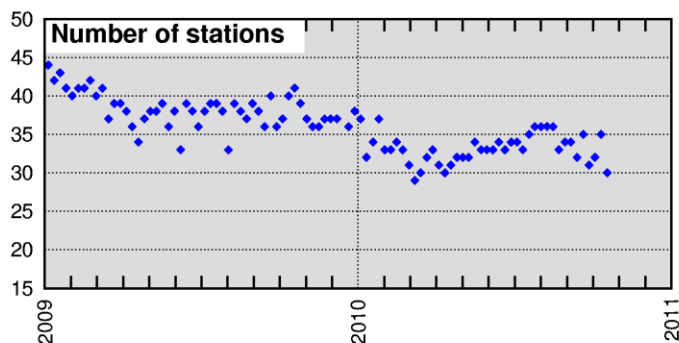
ESA 04-05

Per week comparison to ITRF2008P

esawd04-05

GAU 09
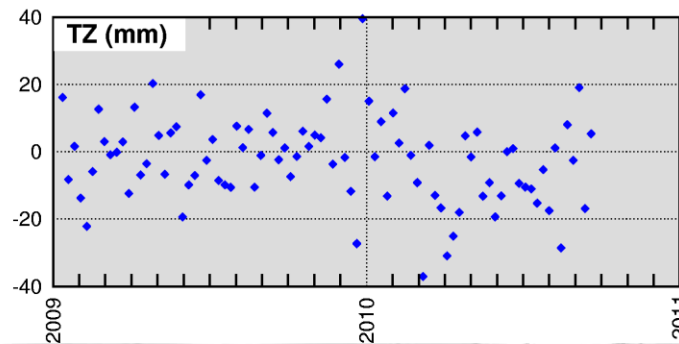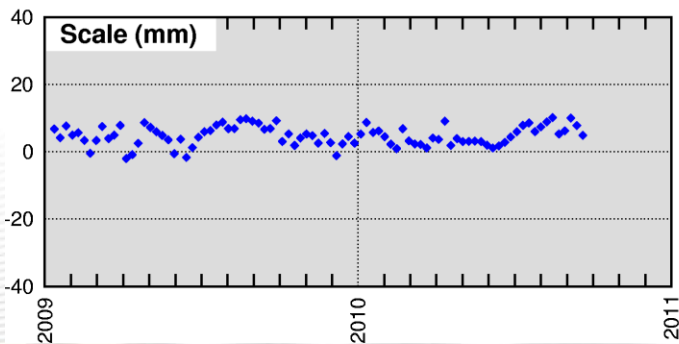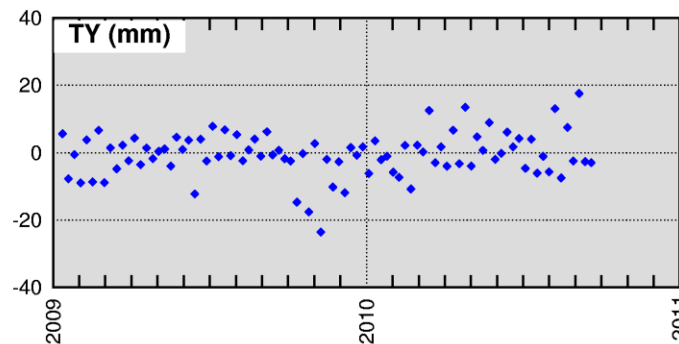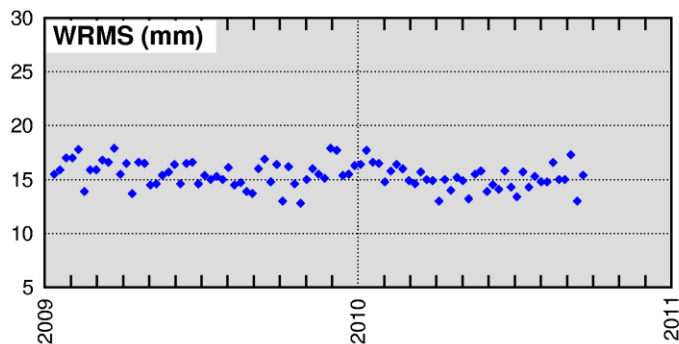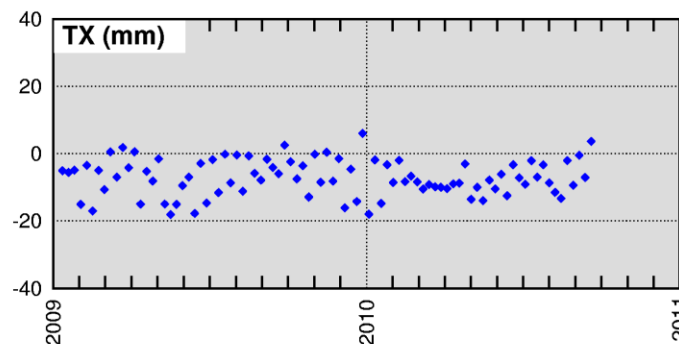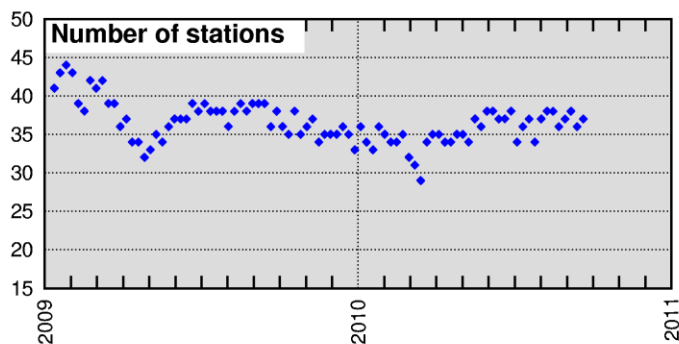
Per week comparison to ITRF2008P

gauwd09

GOP 32
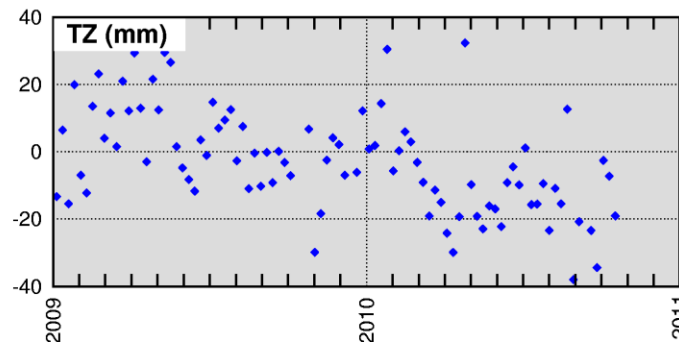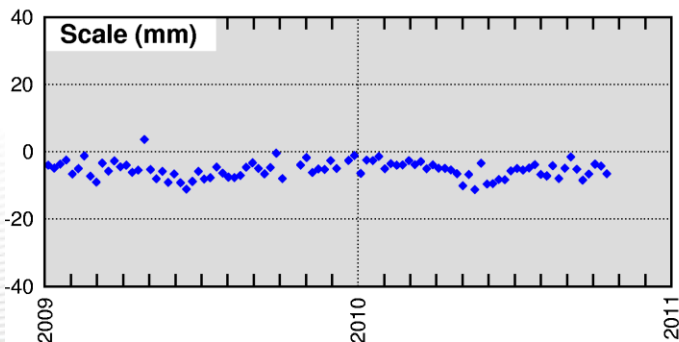
Per week comparison to ITRF2008P

gopwd32

GSC 11

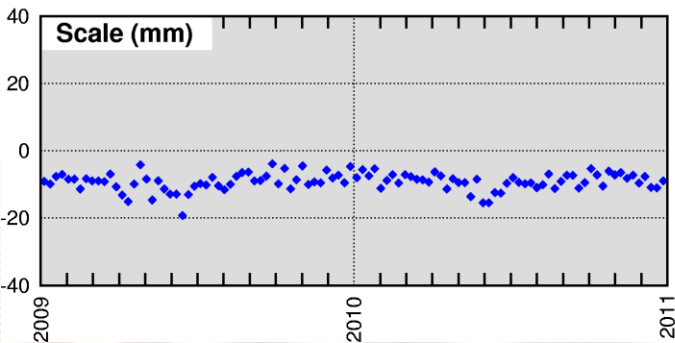Per week comparison to ITRF2008P

gscwd11

IGN 08
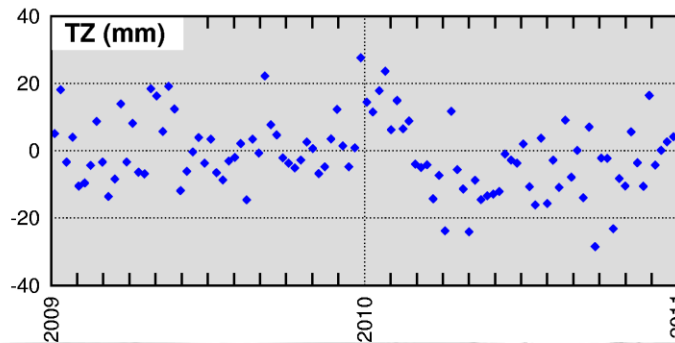
Per week comparison to ITRF2008P
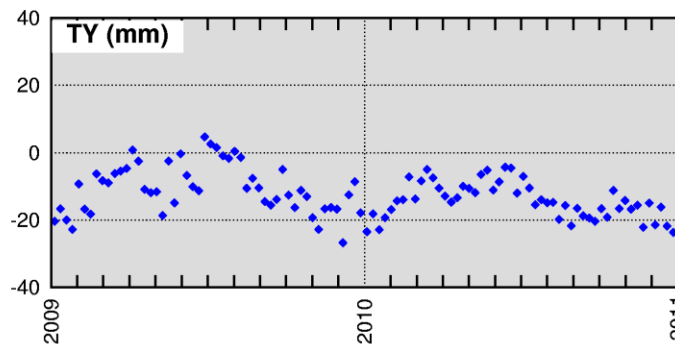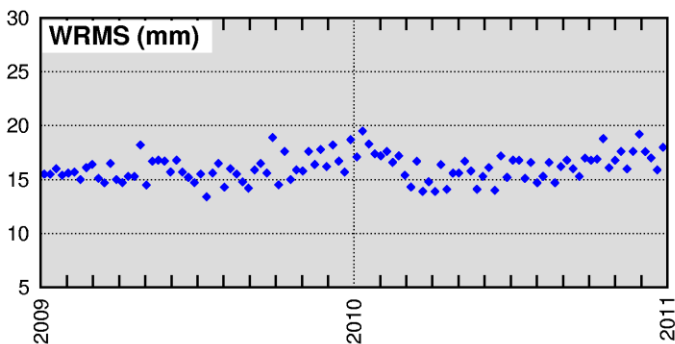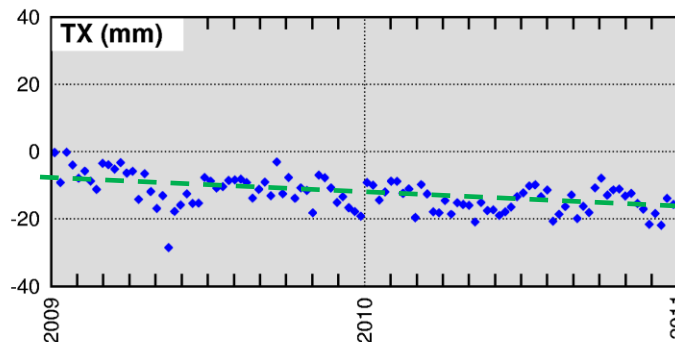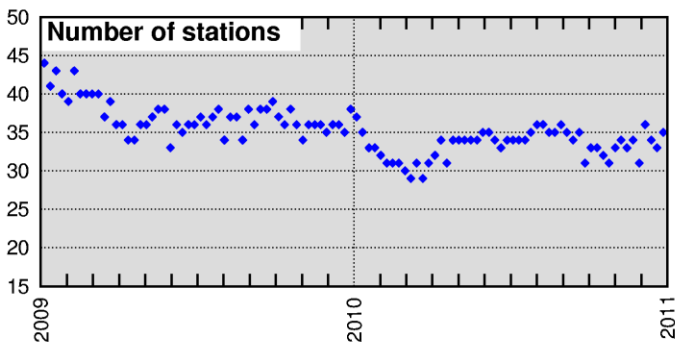
◆ ignwd08
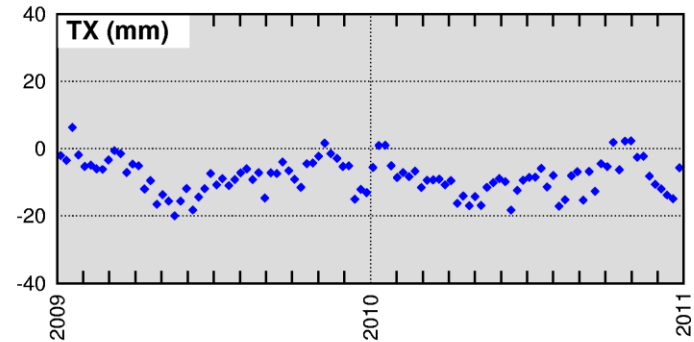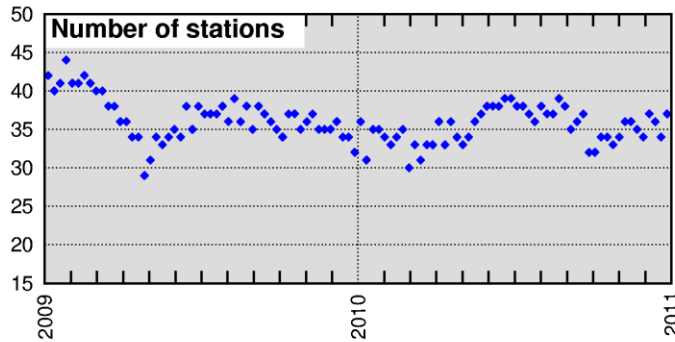
Per week comparison to ITRF2008P — inawd07

LCA 26-28
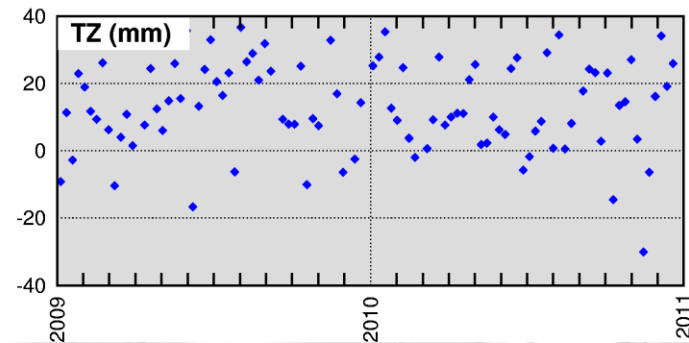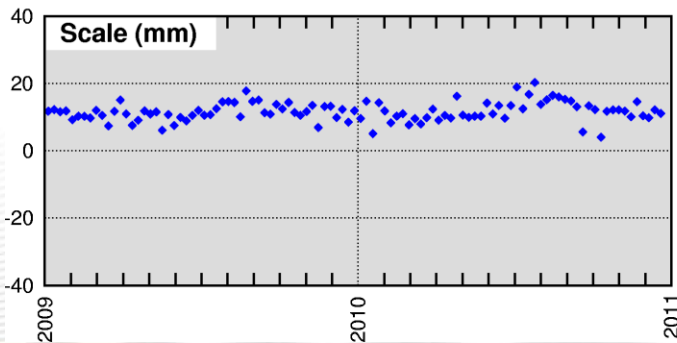
Per week comparison to ITRF2008P
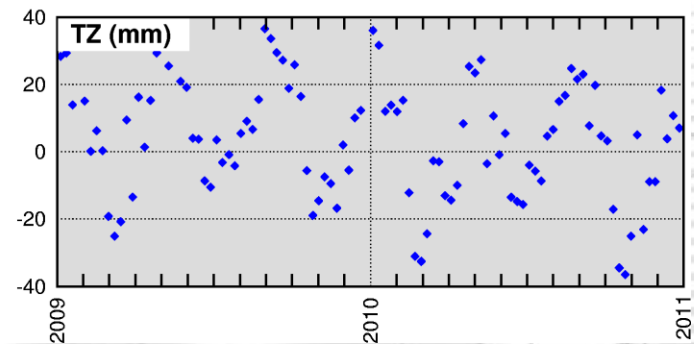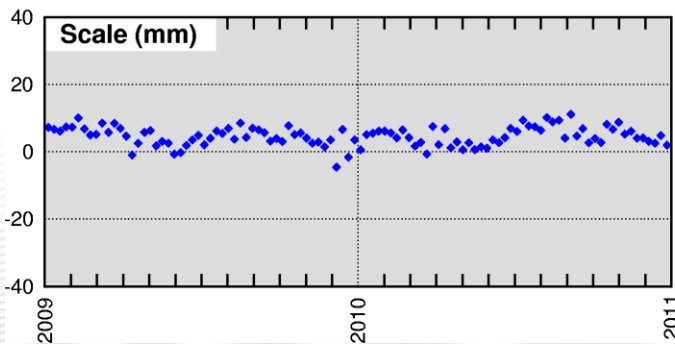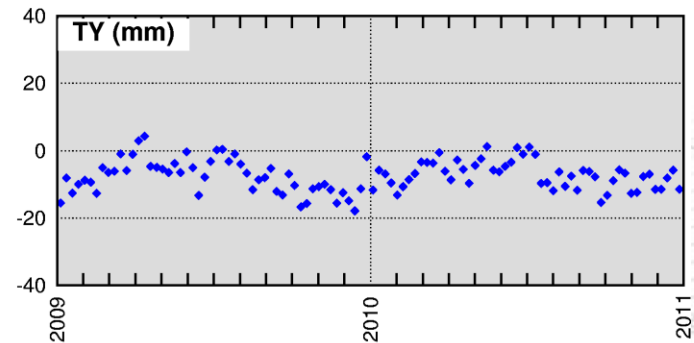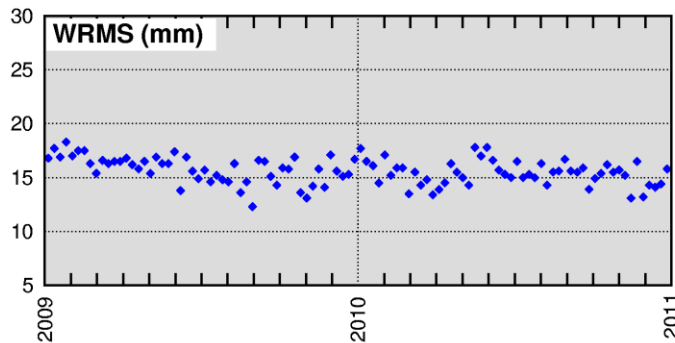
lcawd26-28

Per week comparison to ITRF2008P
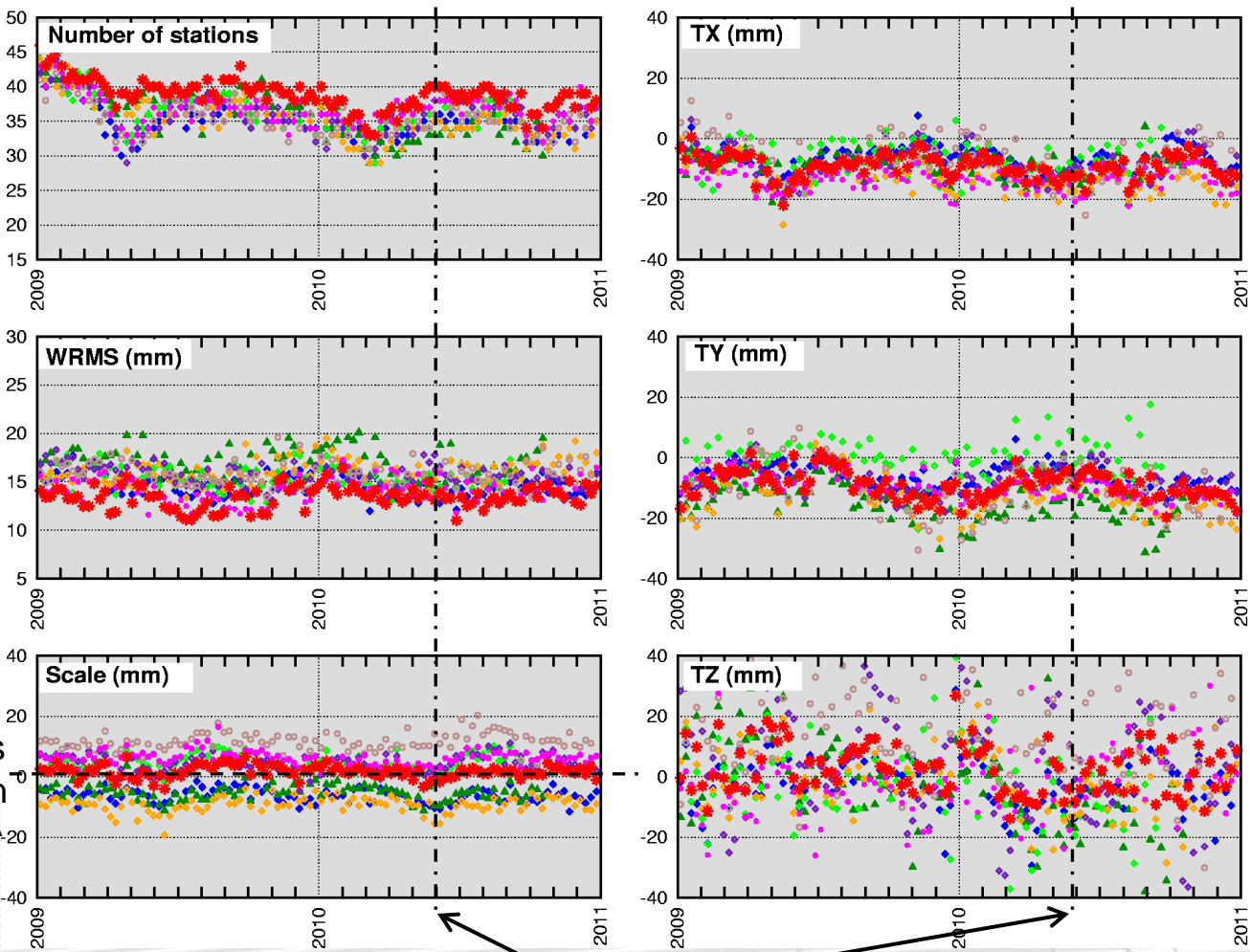
2 groups of ACs wrt to scale sign
>0 GOP IGN INA LCA
<0 ESA GAU GSC

Cryosat-2

Mean/std of Scale factor, Tx, Ty and Tz

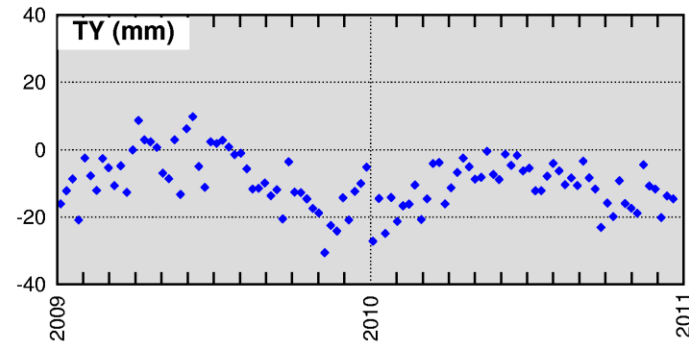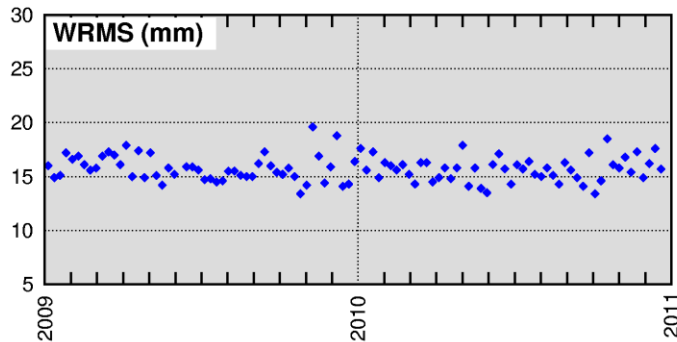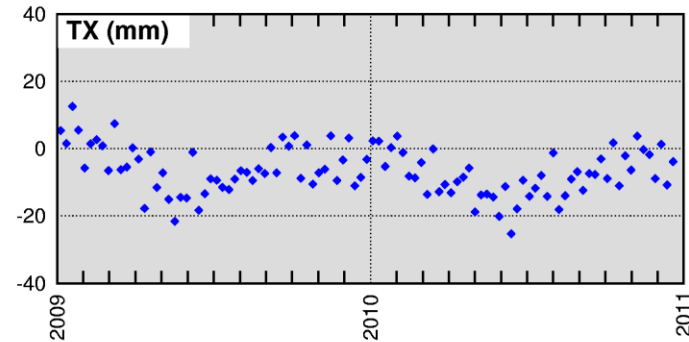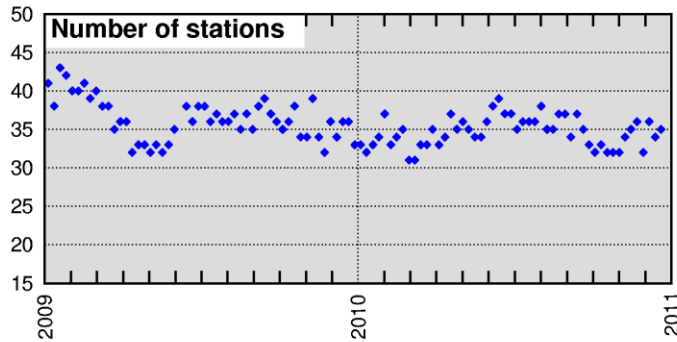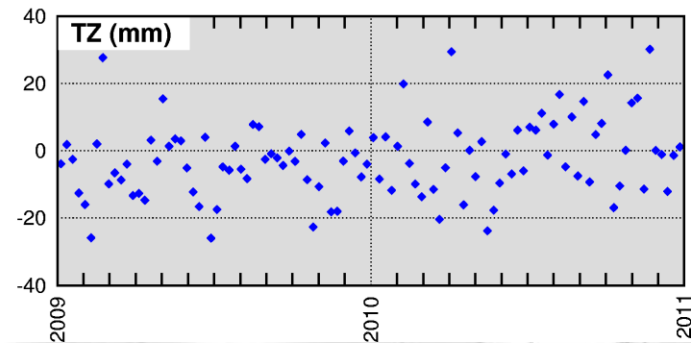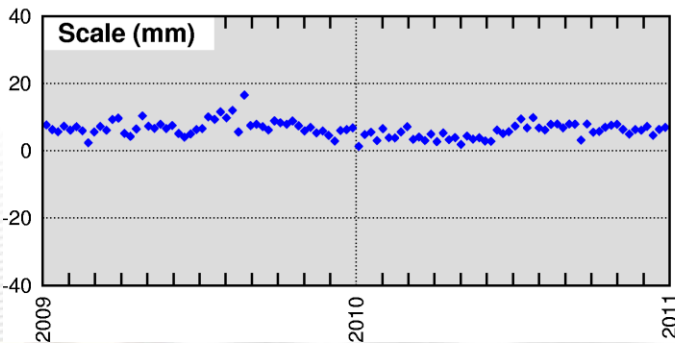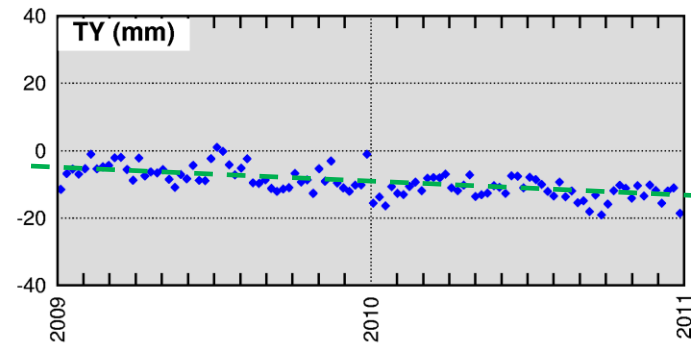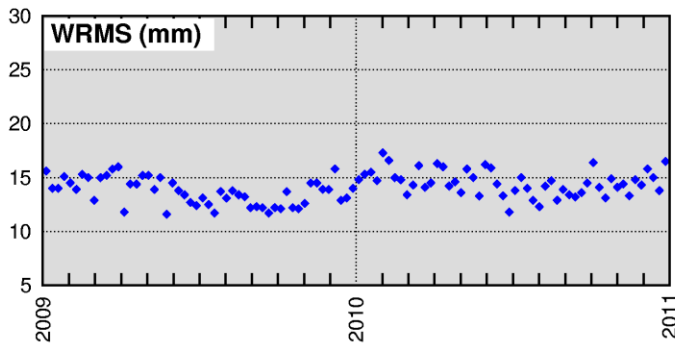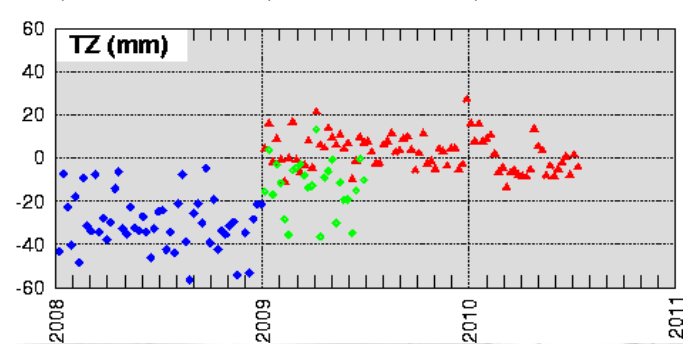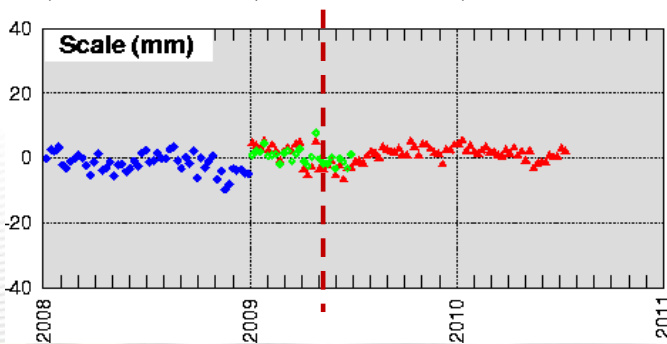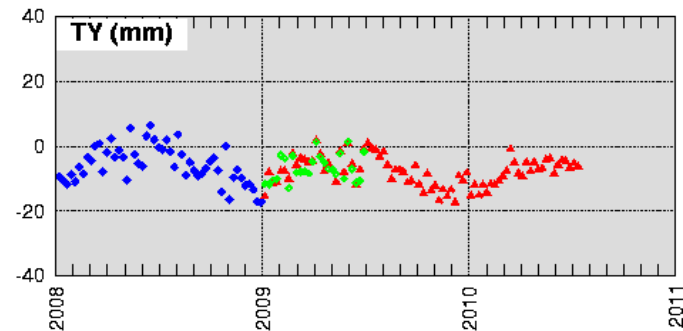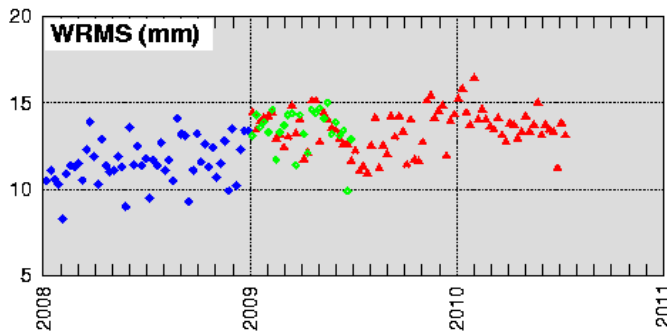|		ESA	GAU	GOP	GSC	IGN	INA	LCA	IDS
Scale [mm]	2009	-5.82 / 2.27	-5.27 / 2.67	4.73 / 3.06	-9.30 / 2.87	4.46 / 2.87	11.35 / 2.32	7.10 / 2.36	2.02 / 2.38
	2010	-6.84 / 2.14	-5.47 / 2.32	4.84/ 2.68	-9.08 / 2.29	4.75 / 2.77	11.83 / 3.24	5.49 / 1.96	1.37 / 1.62
Tx [mm]	2009	-5.73 / 4.63	-9.12 / 4.83	-6.60 / 5.98	-10.55 / 5.30	-7.83 / 5.33	-5.26 / 7.19	-13.61 / 3.43	-8.62 / 4.19
	2010	-7.56 / 4.19	-10.23 / 4.77	-7.86 / 4.48	-14.73 / 3.72	-8.90 / 5.14	-8.11 / 6.68	-13.63 / 3.79	-10.04 / 3.45
Ty [mm]	2009	-5.71 / 3.70	-13.20 / 5.28	-1.63 / 6.50	-10.55 / 7.36	-7.65 / 5.23	-8.24 / 8.81	-6.91 / 3.47	-8.01 / 4.88
	2010	-6.85 / 3.89	-18.14 / 5.37	0.73 / 6.53	-14.37 / 5.28	-7.09 / 4.02	-11.29 / 6.47	-11.92 / 2.93	-9.83 / 4.06
Tz [mm]	2009	-0.72 / 8.94	2.88 / 12.95	0.45 / 11.99	1.31 / 9.50	8.97 / 17.95	16.57 / 16.06	-4.85 / 9.89	4.19 / 7.86
	2010	-4.59 / 8.73	-11.10 / 16.98	-6.22 / 13.41	-3.35/ 11.49	0.93 / 17.98	13.88 / 15.03	-0.03 / 12.17	0.45 / 7.93

for GAU and year 2009, weeks corresponding to doy 284 and 291 have been excluded for the statistics since too high values for all parameters

Routine Combination vs IDS3 – Before EGU

Scale : jump present in the combined solution without Jason-2 but smaller than with Jason-2 included
Tz   : there is a jump due to Jason-2 – but Tz is now closer to zero

IDS-3
(ITRF2008 DORIS
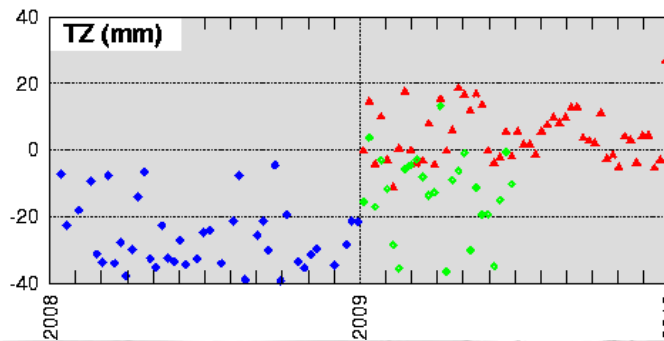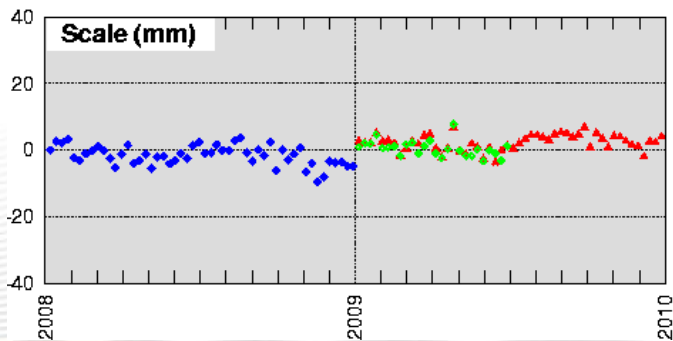contribution - no
Jason-2)

Routine
combination
without Jason-2

Routine
combination with
Jason-2

http://www.cls.fr

Scale : no more jump (was due to a bug in the combination scripts)
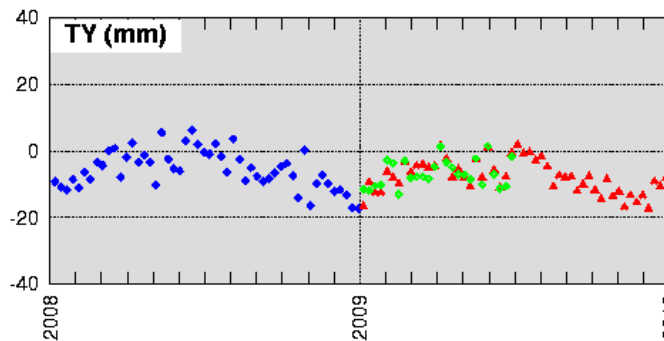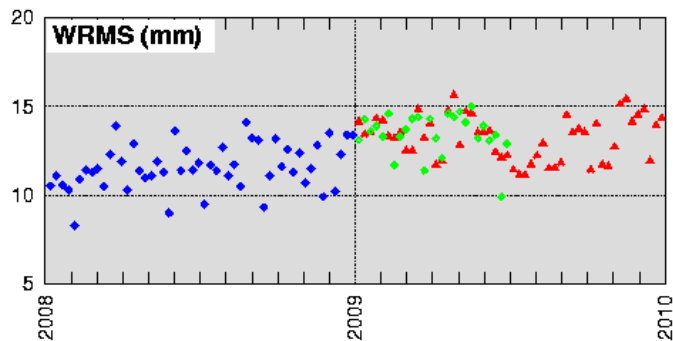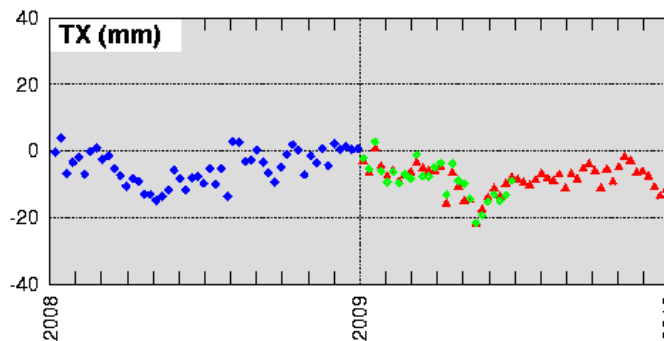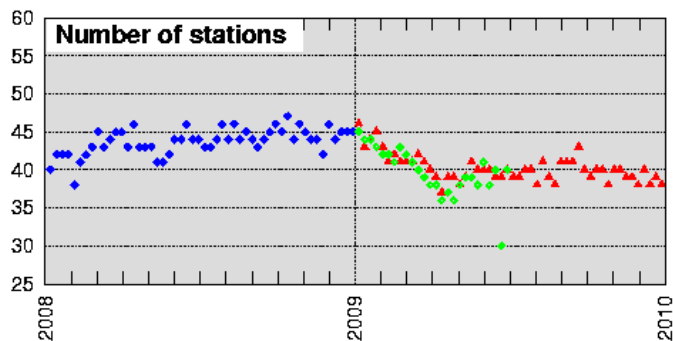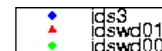
IDS-3
(ITRF2008 DORIS
contribution - no
Jason-2)

Routine
combination
without Jason-2

Routine
combination with
Jason-2

What's next ?

- CATREF school for CCs members

- Move from ITRF2008P to POD2008

- Production of projected and transformed IDS series

- Production of STCD files for IDS series

- Draft of combination reports

- Move the combination service to an operational platform

- Acronym of IDS combined series ? ids ?

- Number of IDS combined series ? 03, 04 or 01 ?

- Deliver the IDS combined series or wait until reprocessing with DPOD2008 ?

- What about the STCD ?
  All Acs STCD will be available at IDS DCs ?
  If so, who will perform the projection and stcd transformation ?

- …