



# IDS Combination Center Update Status of the current combination

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# Content

- News from IDS CC
- Routine evaluation status
- Evaluation of new ESA and GSC series implementing stations frequency correction
- Feedback on origin of 2 Acs families wrt scale



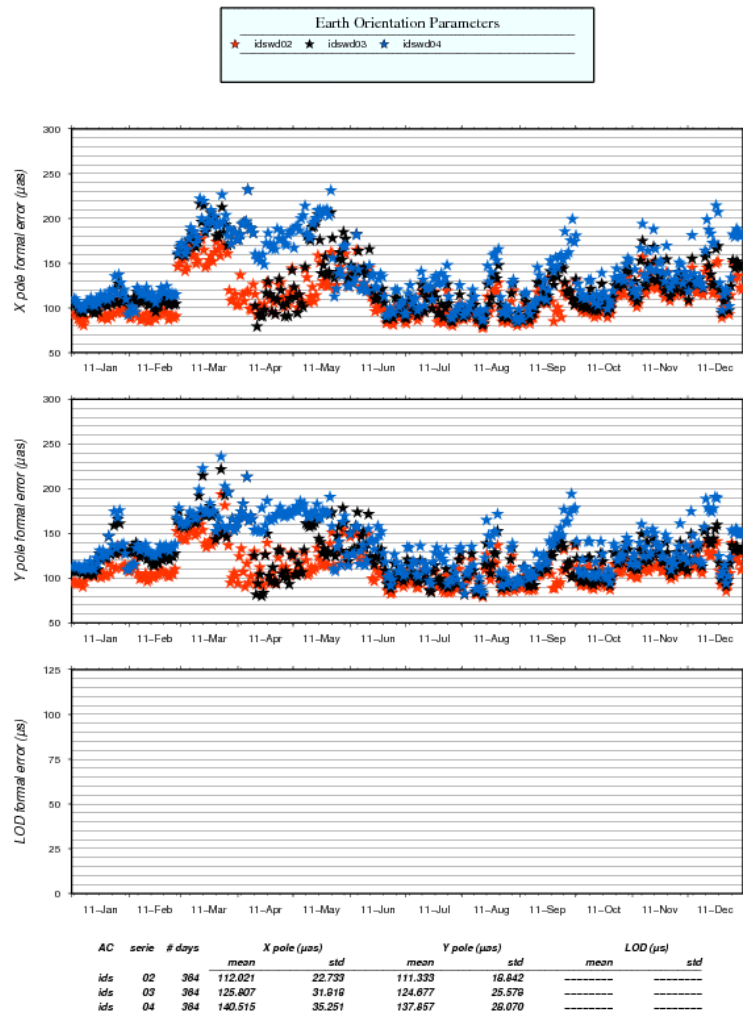
# What's new ?

Test on the introduction on rotations thresholds to try to avoid shifts in EOPs formal errors

- ➔ New evaluation reports contain rotation parameters
- ➔ Unsuccessful

New plotool version to visualize Helmert parameters

<http://www.ids-doris.org/plotool/stcd/7ptool.php>





## Delivery status (on 2013-04-03)

	<b>Series</b>	<b>Last week</b>	<b>Comments</b>
<b>ESA</b>	<i>06</i>	<i>12288</i>	Delivery to IDS DCs 07 ?
<b>GOP</b>	<i>34</i>	<i>12358</i>	
<b>GSC</b>	<i>18</i>	<i>12365</i>	
<b>IGN</b>	<i>08</i>	<i>13055</i>	
<b>INA</b>	<i>07</i>	<i>13034</i>	
<b>LCA</b>	<i>30/32</i>	<i>12358</i>	No more series 32 including HY-2A after 12309 ?



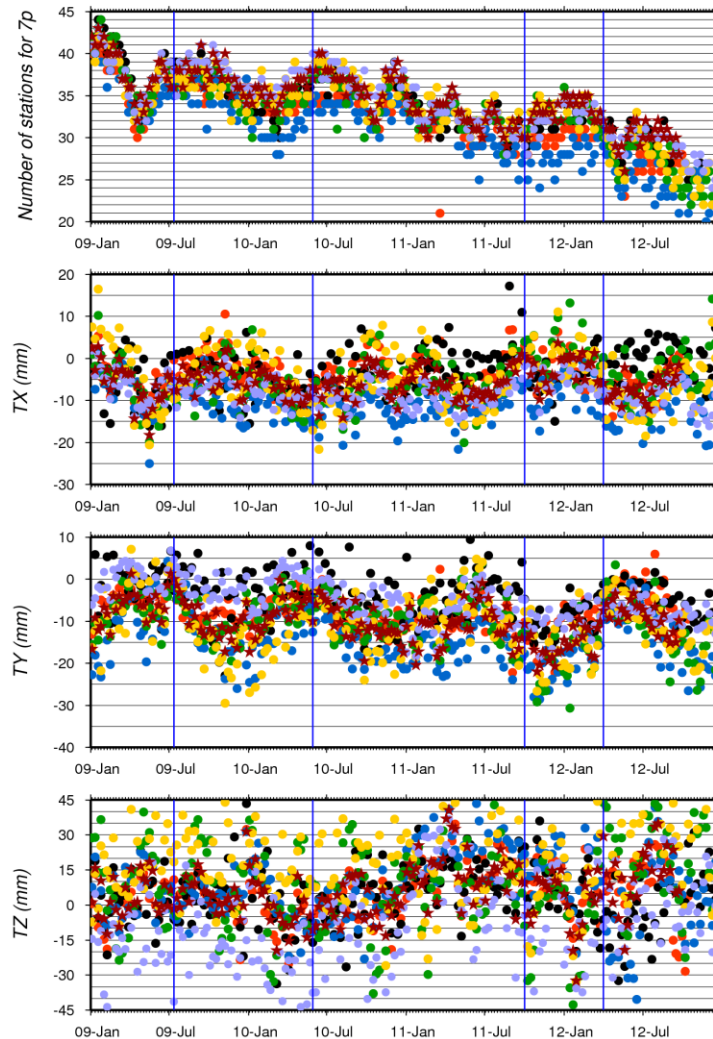
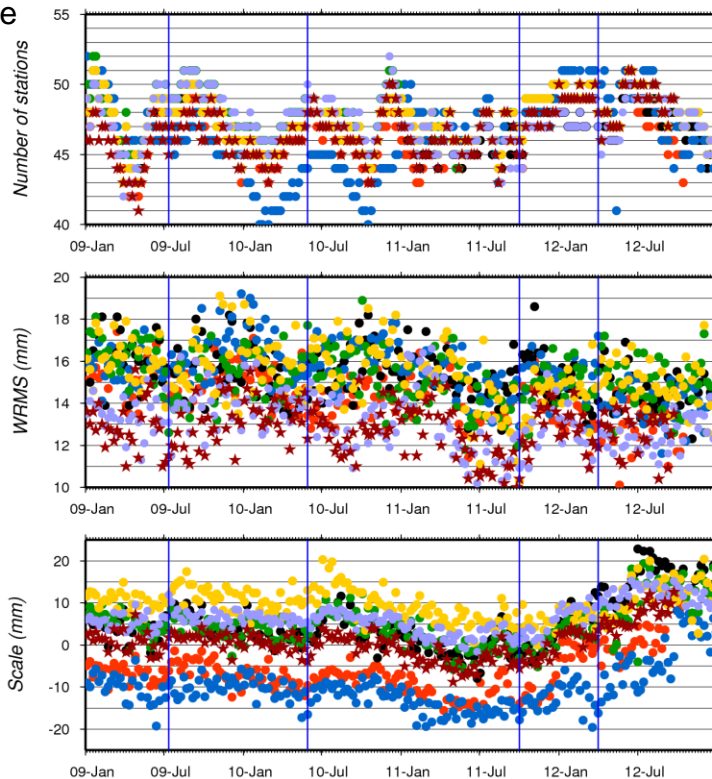
# Evaluation wrt ITRF2008

- Time period = 2009-001 to 2012-365 Per week comparison to ITRF2008
- IDS combined solution until 12267



- No ESA 07
- GSC 18 from 12274

- Scale increases since Dec 2011
- 2 ACs families wrt scale

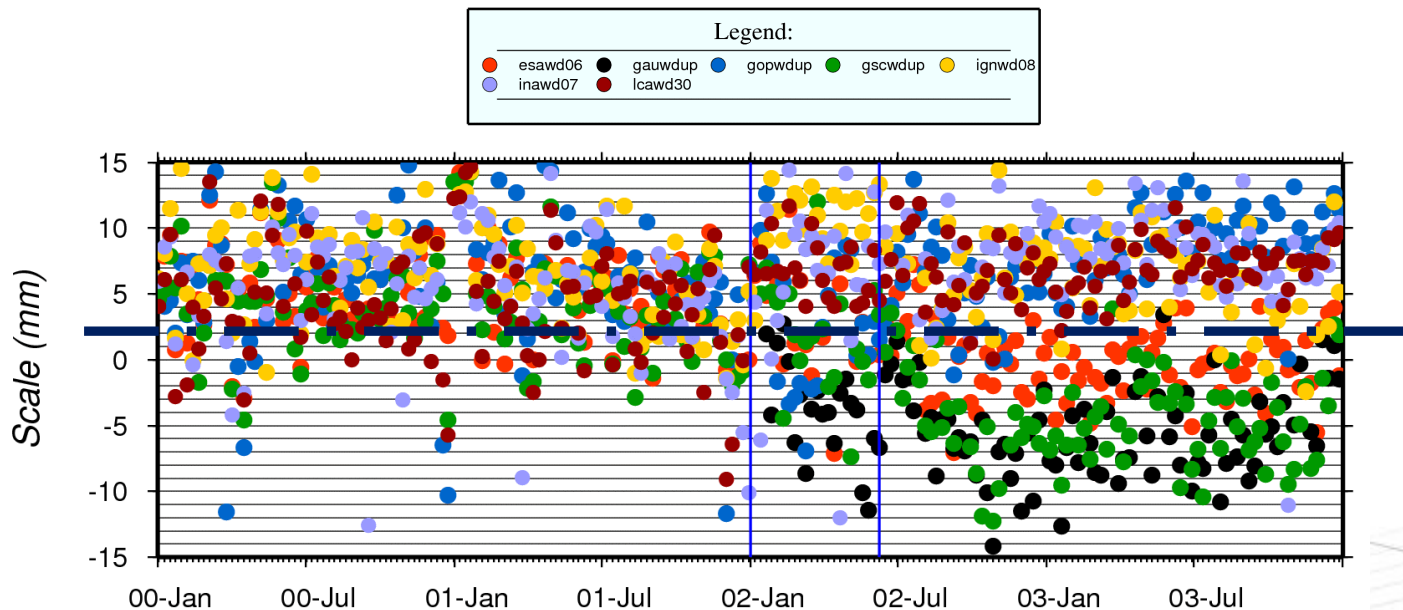




## Mean/std of Scale factor, Tx, Ty and Tz

		ESA 06	GOP 34	GSC 18	IGN 08	INA 07	LCA 30	LCA 32
# weeks		3	13	14	14	14	8	5
Scale [mm]	2012 q4	9.76 / 1.21	15.71 / 2.36	4.64 / 2.78	13.49 / 3.24	12.74 / 4.72	10.51 / 1.44	12.38 / 2.04
Tx [mm]	2012 q4	-2.77 / 2.61	-1.77 / 4.46	-10.86 / 5.91	-1.09 / 6.76	-4.43 / 5.57	-12.53 / 3.32	-8.26 / 3.90
Ty [mm]	2010 q4	--10.17 / 2.96	-8.49 / 2.66	-19.84 / 3.80	-17.32 / 4.67	-15.71 / 4.55	-10.24 / 2.27	-8.32 / 1.91
Tz [mm]	2010 q4	-12.70 / <u>16.06</u>	10.58 / 10.18	-0.45 / 10.10	19.54 / <u>24.91</u>	24.77 / <u>20.24</u>	0.44 / 14.36	-3.44 / 9.79

Tz std is at the order of Tz mean or even larger



- Time period = 2000-001 to 2003-365

- **Two families of scale since early 2002**

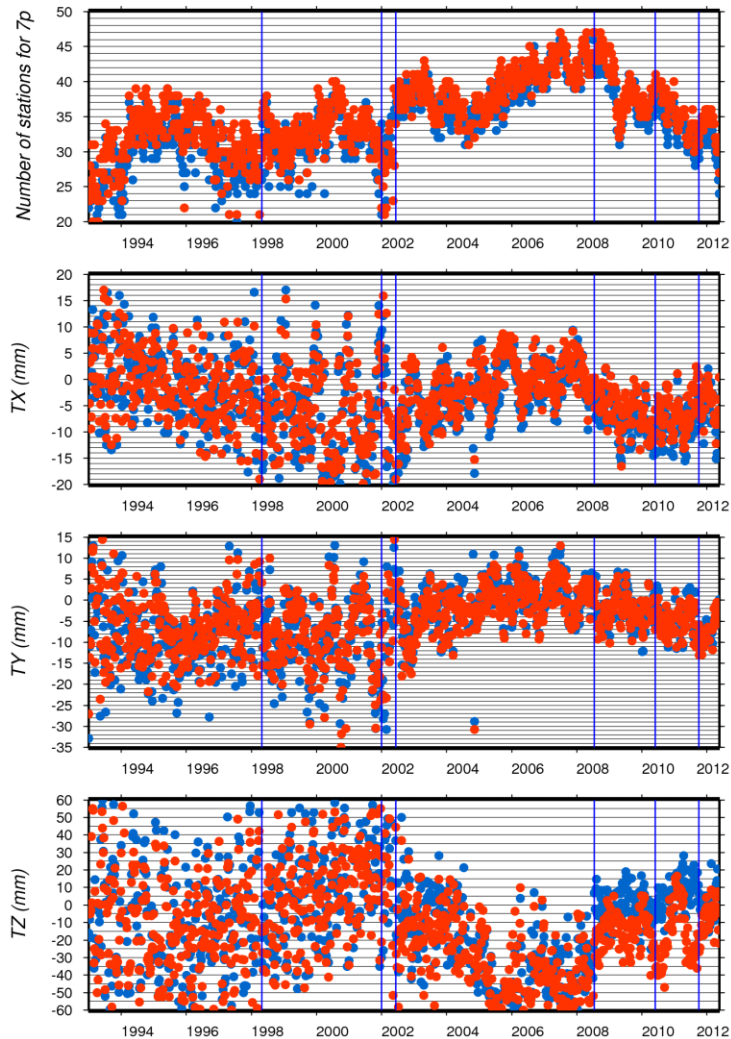
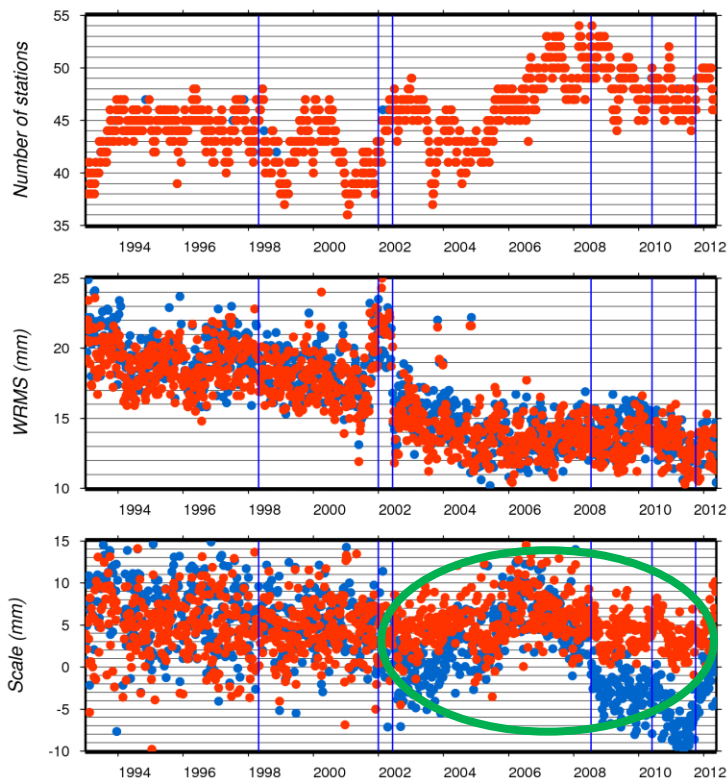
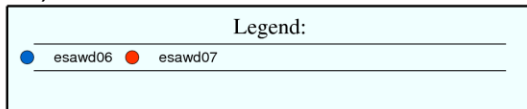
One group (esa, gsc) did not into account beacon frequency shifts

Early 2002, beacon frequency estimates were not anymore in DORIS data files



# ESA 07 vs ESA 06 Helmert parameters wrt ITRF2008

- Time period = 1993-003 to 2012-141 Per week comparaison to ITRF2008
- Major impact on scale (after 2002) !!!
- Minor differences on EOPs

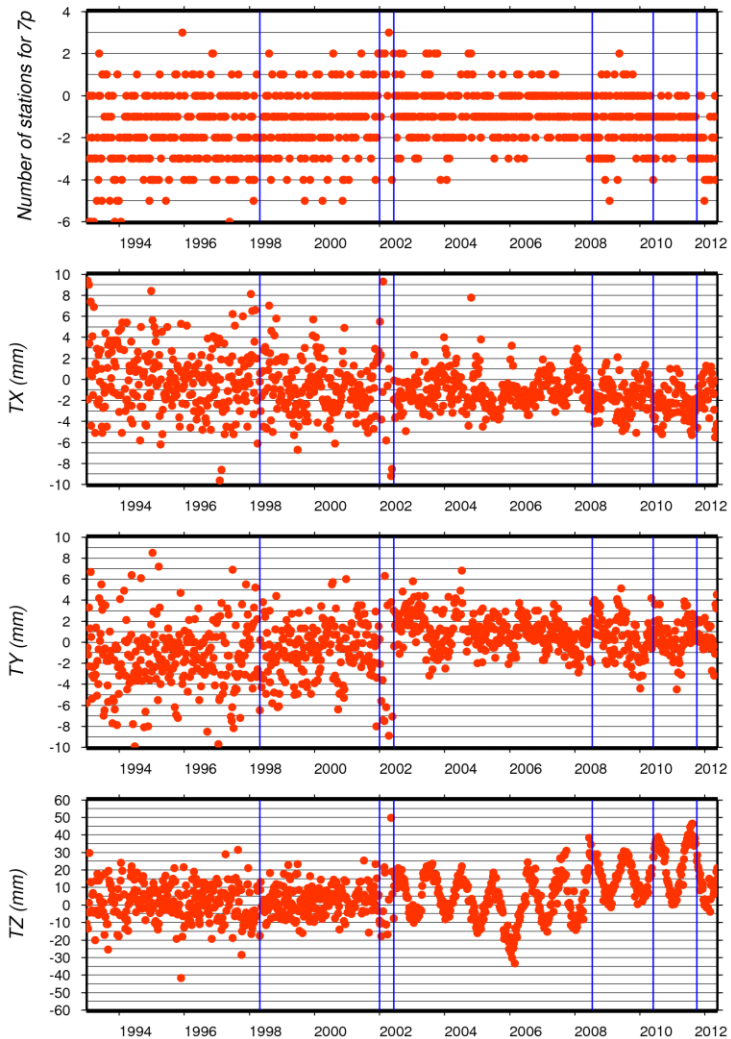
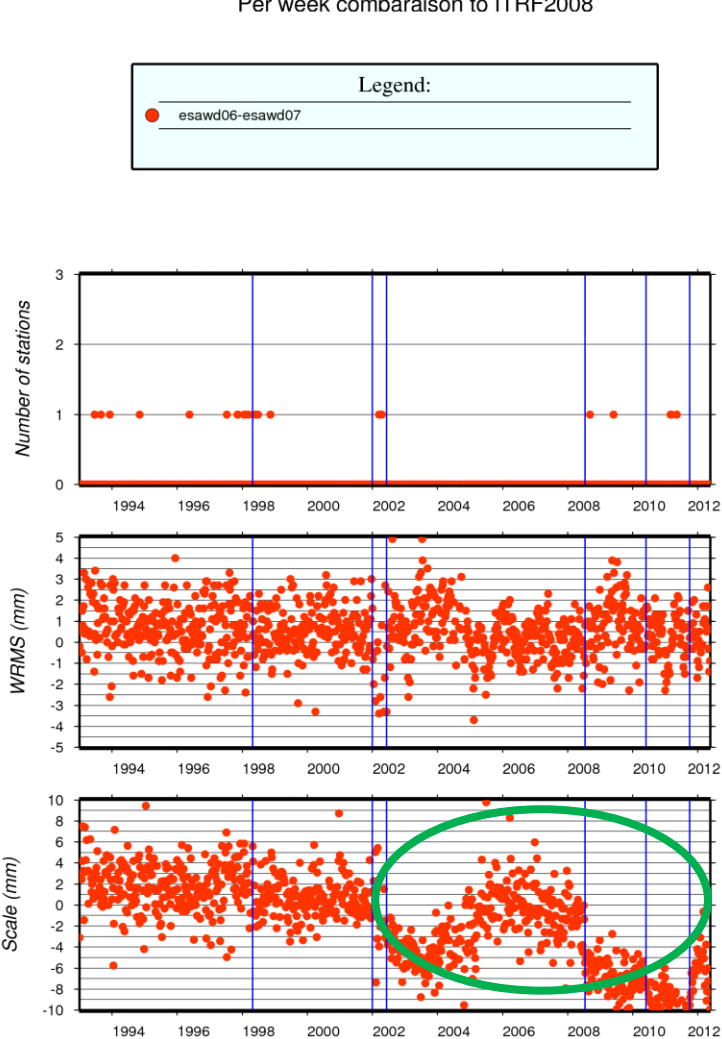
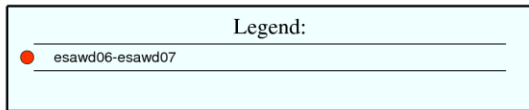




# ESA 07 vs ESA 06

## Differences of Helmert parameters

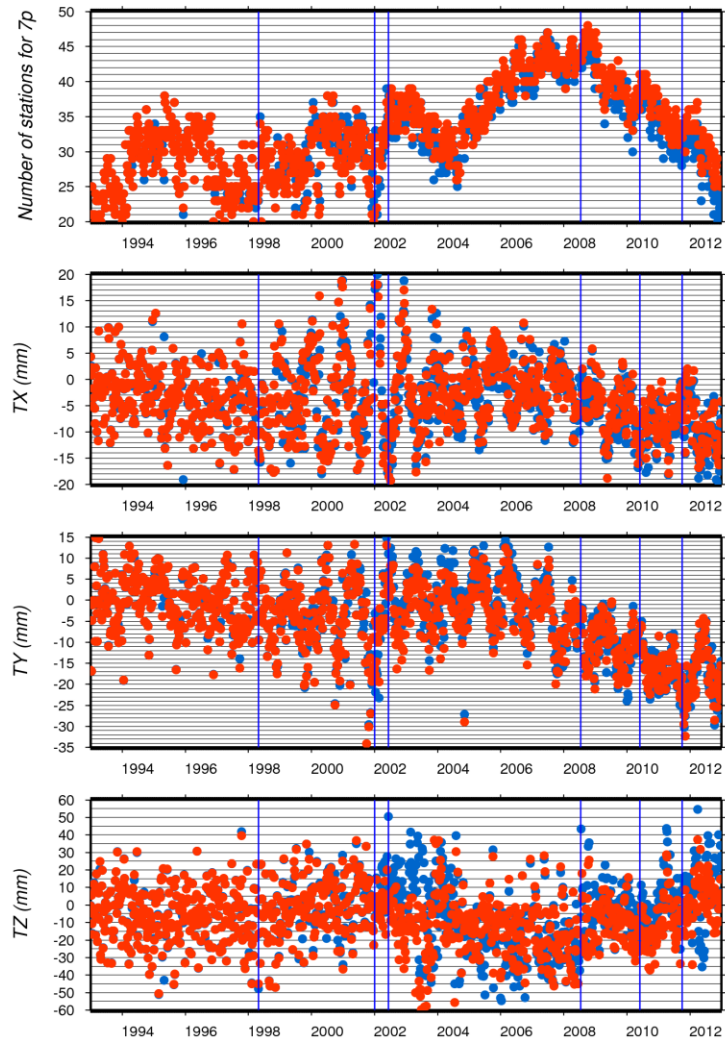
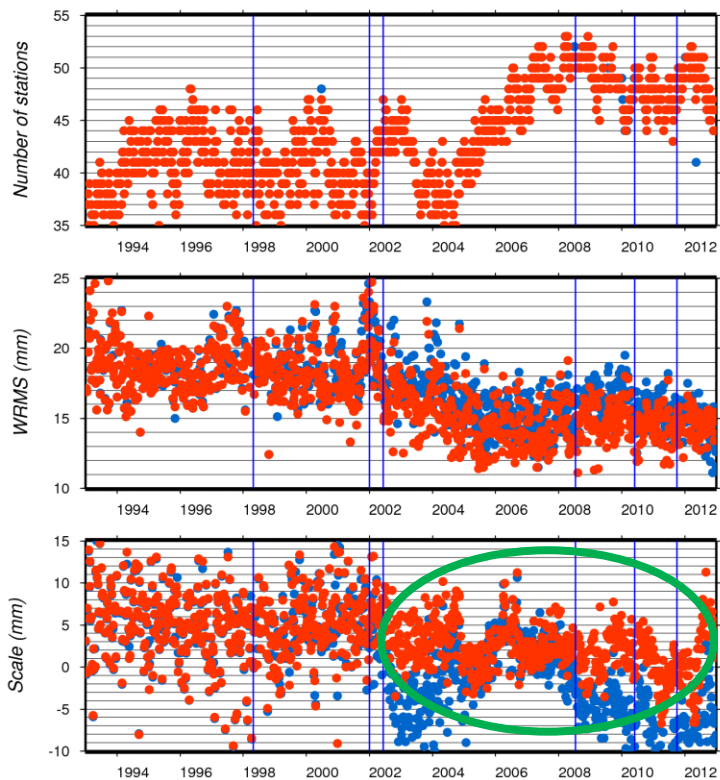
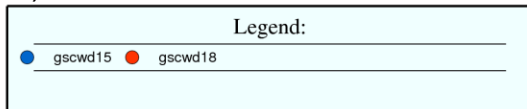
Per week comparison to ITRF2008





# GSC 18 vs GSC 15 Helmert parameters wrt ITRF2008

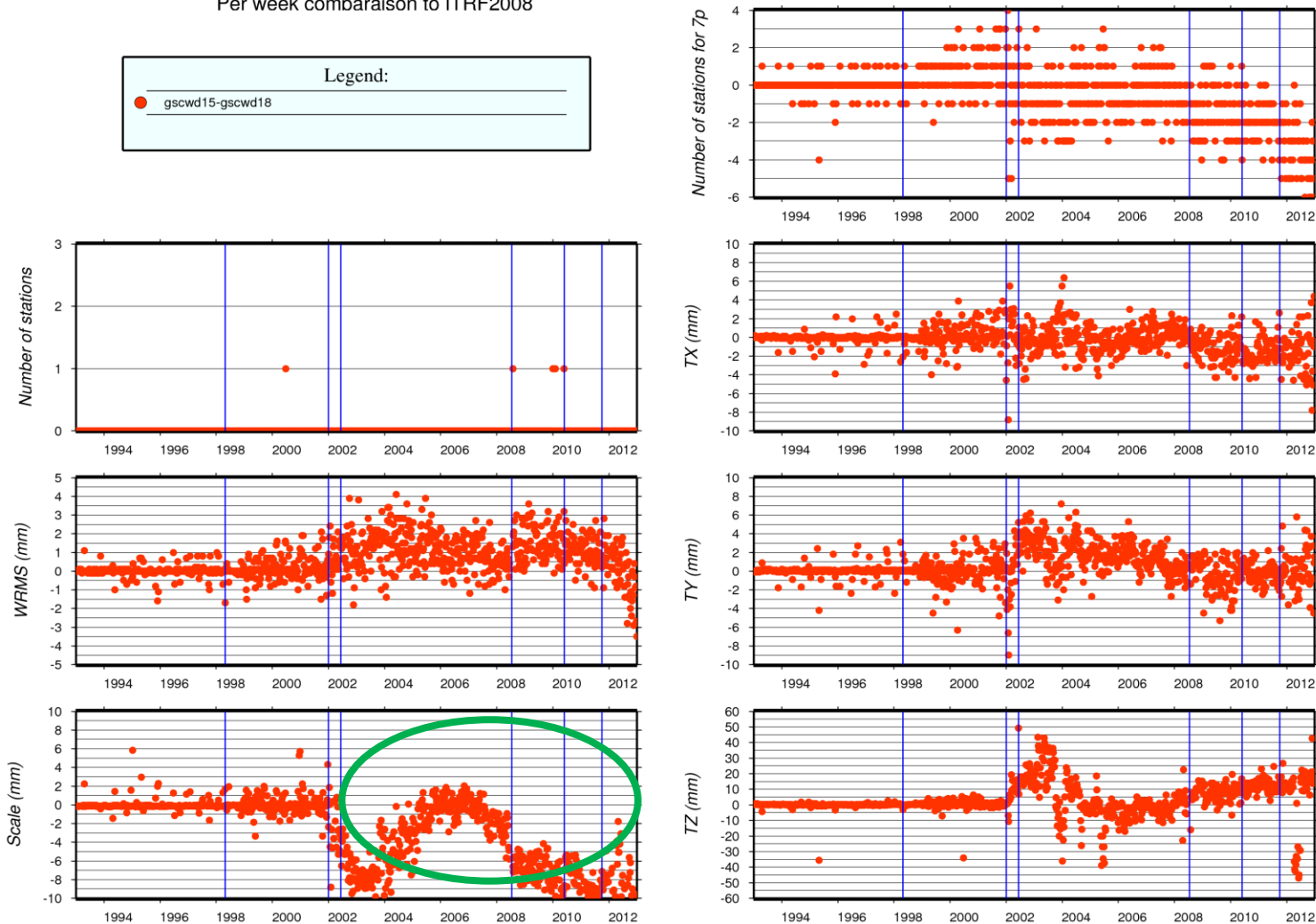
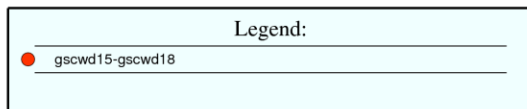
- Time period = 1993-003 to 2012-344
- Major impact on scale (after 2002) !!!



# GSC 18 vs GSC 15

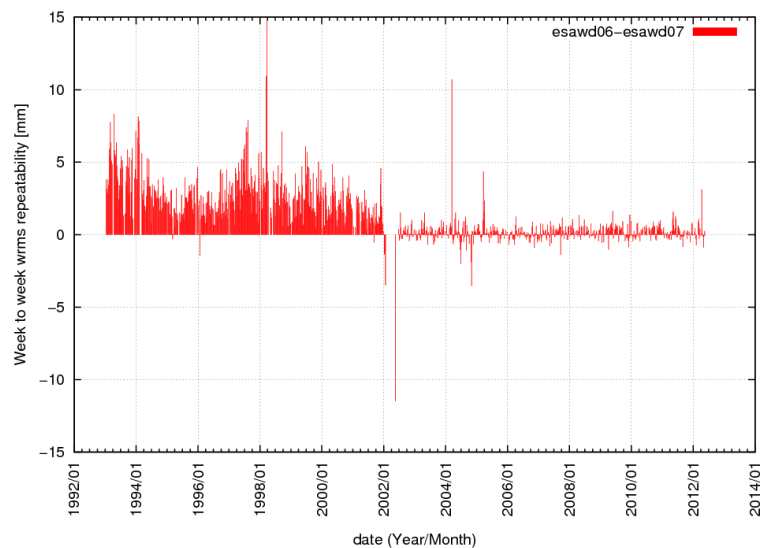
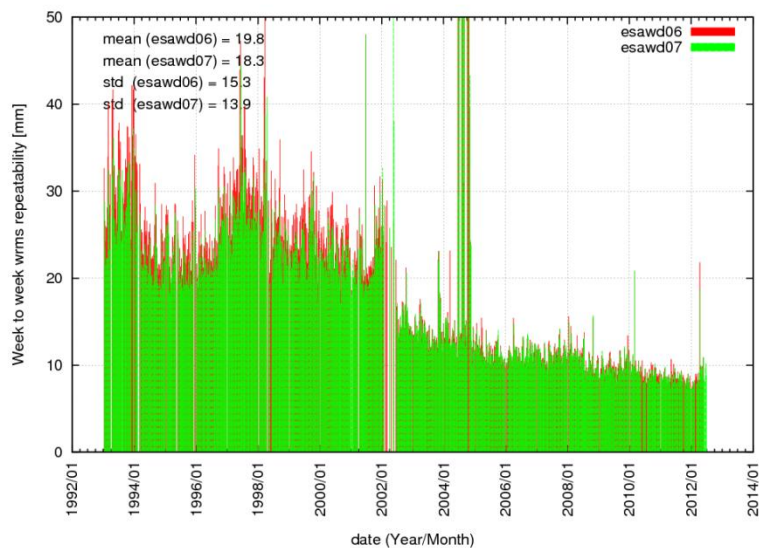
## Differences of Helmert parameters

Per week comparison to ITRF2008



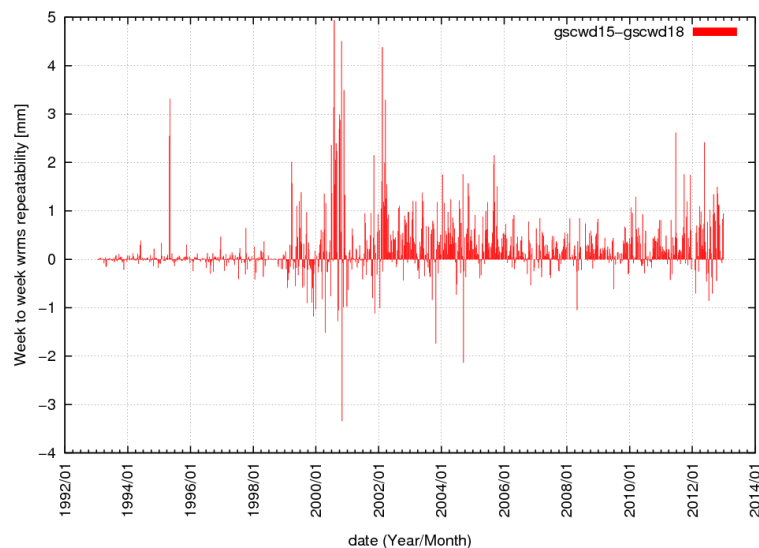
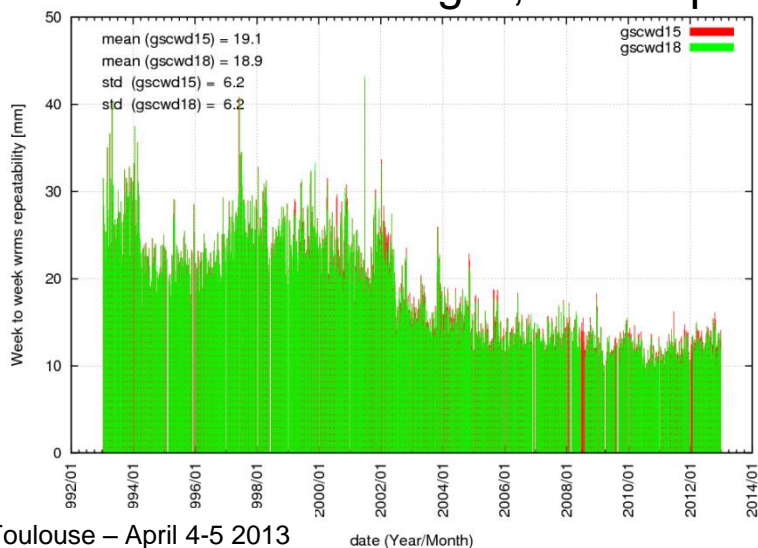


# ESA 07vs06 and GSC 18vs15 – Week to week repeatability



For esa, main differences before 2002

For both esa and gsc, nice impact of the nb of DORIS satellite after 2002





# ESA 07vs06 and GSC 18vs15 – Comparisons of stacked solutions

## Method:

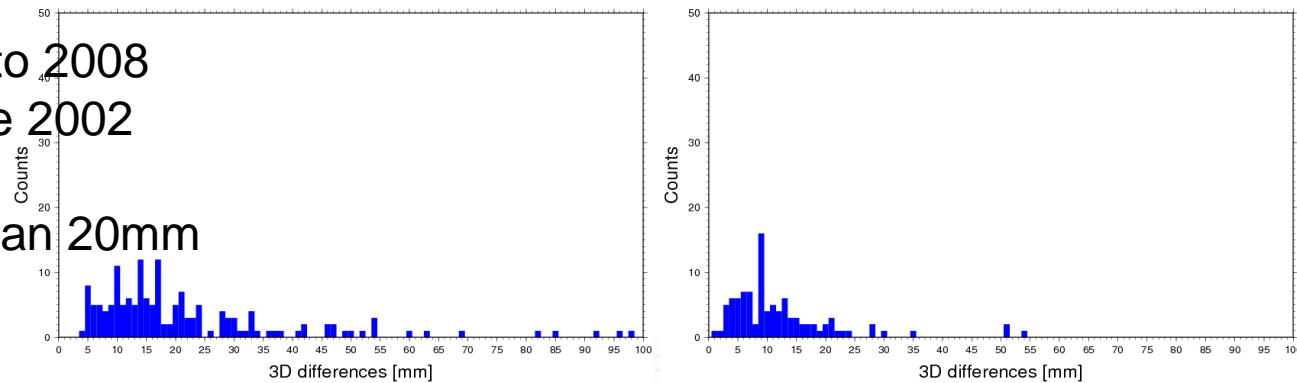
- Stacking of each series over time period 1993-001 to 2008-365
- Projection of stations positions at minimum variance epochs
- For each solution, coordinates differences at epochs of latest series solution

## Conclusions:

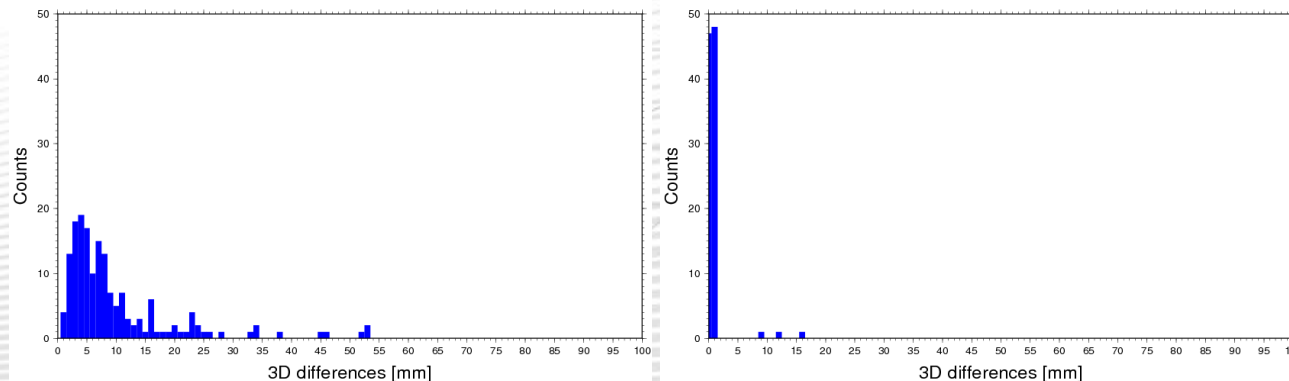
High differences from 1993 to 2008 are due to differences before 2002

Differences can be higher than 20mm

esa 06 vs esa 07: 1993-2008 (left) 1993-2001 (right)



gsc 15 vs gsc 18: 1993-2008 (left) 1993-2001 (right)





# Conclusions

Page 14

- **Origin of 2 Acs families wrt scale is identified: beacon frequency variations**
  - **With new series (esa 07 and gsc 18), one unique AC family wrt scale**
- more homogeneous scale for IDS contribution to ITRF2013**

**Next : ITRF2013**