



# DORIS Cumulative Solution ids20d05

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- **Second version of the DORIS position and velocity cumulative solution from the IDS Combination Center.**
  - Stacking of the IDS combined series ids 13/14 from 1993 doy 003 to 2020 doy 005.
  - Position constraints from the IGN DORIS-to-DORIS ties (2020/04/08).
  - Continuity velocity constraints.
  - Aligned to ITRF2014.
- **Available in SINEX (ids20d05.snx) format.**
- **SINEX solution contains two additional (and unofficial) blocks:**
  - SOLUTION/DISCONTINUITY: origin (ex: earthquake, beacon change, antenna problem...) of the position discontinuities.
  - SOLUTION/DATA\_REJECT: periods of time not included in the combination.
- **Can be downloaded from the IDS Data Centers (CDDIS, IGN).**
  - [ftp://cddis.gsfc.nasa.gov/pub/doris/products/sinex\\_global/ids/](ftp://cddis.gsfc.nasa.gov/pub/doris/products/sinex_global/ids/)
  - [ftp://doris.ensg.ign.fr/pub/doris/products/sinex\\_global/ids/](ftp://doris.ensg.ign.fr/pub/doris/products/sinex_global/ids/)
- **Questions and/or comments: [ids.combination@ids-doris.org](mailto:ids.combination@ids-doris.org)**

- **Velocities must be constrained.**

Site	DORIS station	Reference station	Technique	Source
Flores	FLOA	FLOA	DORIS	DPOD2008 (1.14)
Huahine	HUAA	7123	Laser Ranging	ITRF2014
Iquique	No constraint since seismic active site and no colocation			
Lifou	LIFB	LPIL	GNSS	ITRF2014
Managua	MNAC	MANA	GNSS	ITRF2014
Mangilao (Guam)	MLAC	GUUG	GNSS	ITRF2014
Ny-Alesund II	SVAC	SPJB	DORIS	DPOD2014 (v3.0)
Ottawa	OTTA OTTB	NRC1	GNSS	ITRF2014
Owenga	OWEC OWFC	CHTI	GNSS	ITRF2014
San Juan	SJUC	DORISmail 1159		
Tanna	TANB	TANB	DORIS	DPOD2008 (1.14)
Wetzell	WEUC	WTZS	GNSS	ITRF2014

Station:w	Date	Origin
+ ASDB	01:066:65456	Earthquake M6.0 in 2001/03/07 – Ascension Island region (199km)
- ASDB	02:021:00000	Y velocity change (2002/01/21)
+ ASDB	03:075:00000	New antenna (2003/03/15)
ASEB	15:323:49784	Earthquake M5.2 in 2015/11/19 – ENE of Georgetown St-Helena (91km) In place of discontinuity in 15:319 with unknown origin
EASB	07:063:00000	Beacon change (2007/03/04) In place of discontinuity in 08:196 with unknown origin
EASB	11:060:03226	Earthquake M6.0 in 2011/03/01 – Easter Island region (383km) In place of discontinuity in 11:186 due to beacon change
EASB	12:131:08036	Earthquake M5.9 in 2012/05/10 – Easter Island region (362km) In place of discontinuity in 12:169 with unknown origin
+ EASB	13:306:57166	Earthquake M6.0 in 2012/05/10 – Easter Island region (506km)
+ KRAB	03:270:41605	Earthquake M7.3 in 2003/09/27 – Southwestern Siberia Russia (740km)
MARB	03:027:64585	Earthquake M6.4 in 2003/01/27 – Prince Edward Islands region (234km) In place of discontinuity in 02:169 with unknown origin

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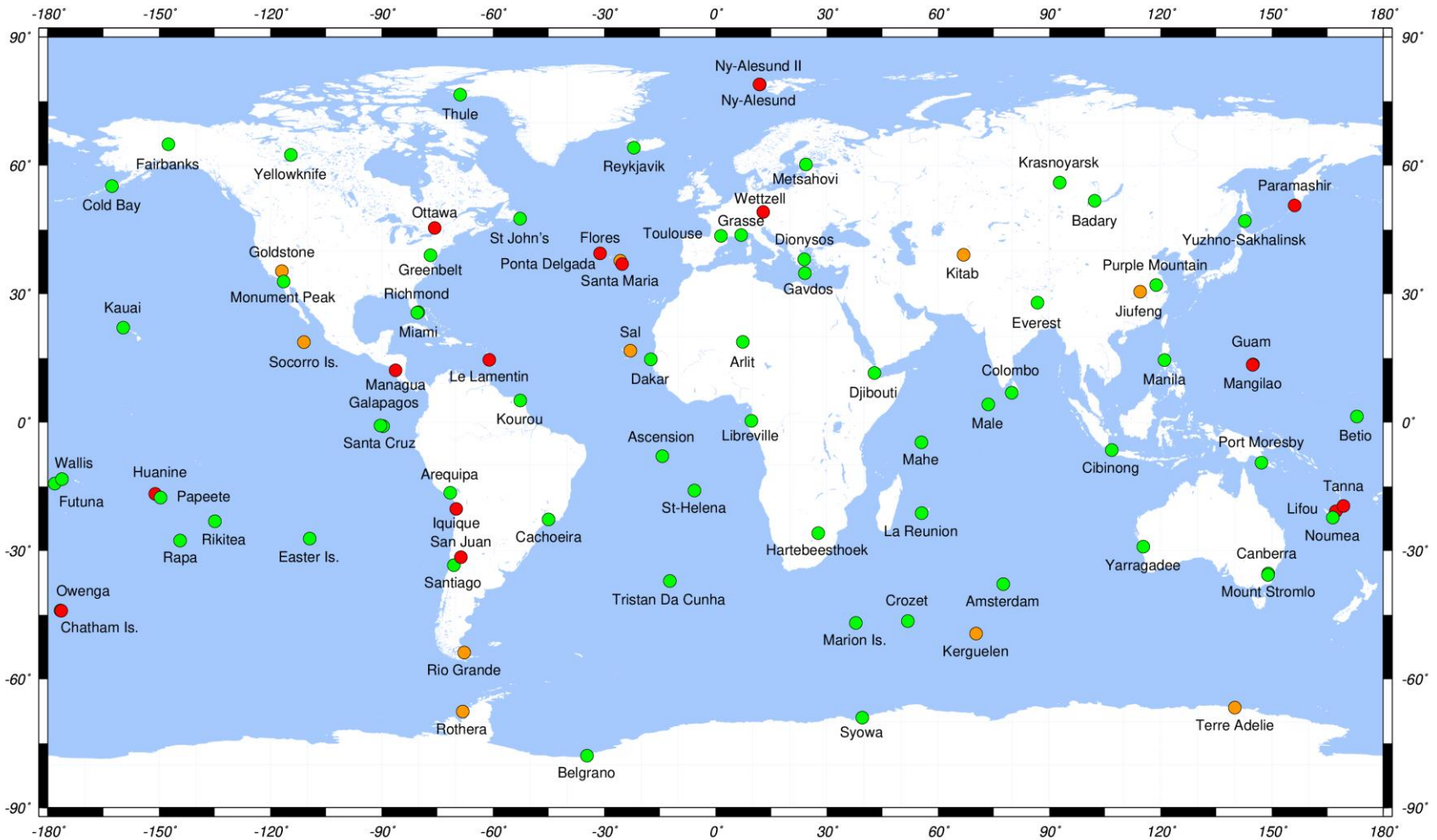
...

Station:w	Date	Origin
PDMB	09:155:00000	USO change in 2009/06/03 In place of discontinuity in 2008/06/04 due to beacon change
SANB	03:171:48641	Earthquake M6.8 in 2003/06/20 – Coquimbo Chile (297km) In place of discontinuity in 03:147:30585 due to earthquake M4.5 Jujuy, Argentina
+ TRIB	04:211:80466	Earthquake M4.5 in 2004/07/29 - Tristan da Cunha region (28km) In place of discontinuity in 2004/08/15 with unknown origin



86 DORIS sites – 197 DORIS stations

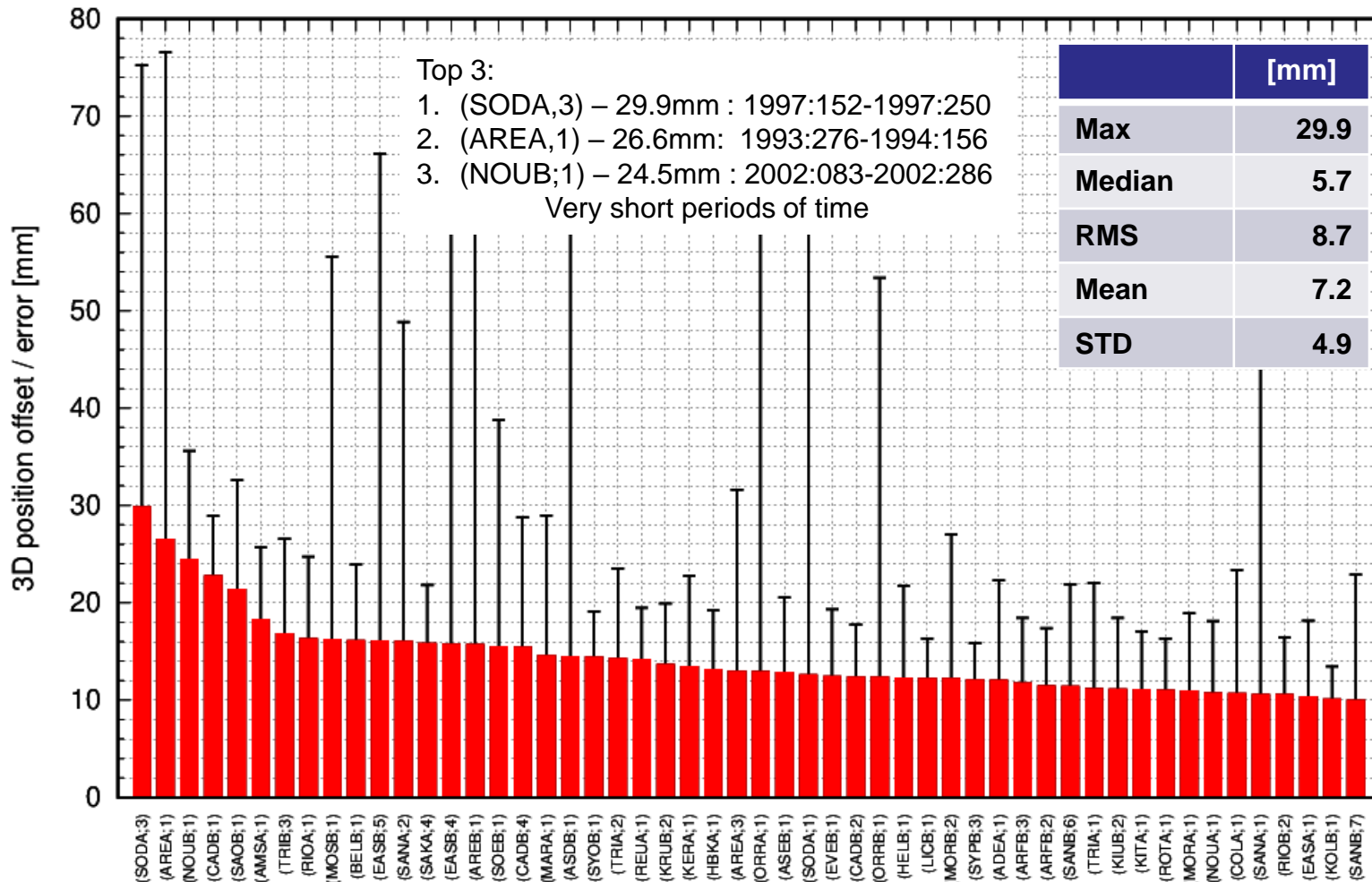
2 new sites wrt ids19d04: San Juan (Argentina) and Ny-Alesund II (Svalbard)



Green circles: ITRF2014 sites. Orange circles: ITRF2014 sites with new station(s) since ITRF2014. Red circles: sites not included in the ITRF2014.

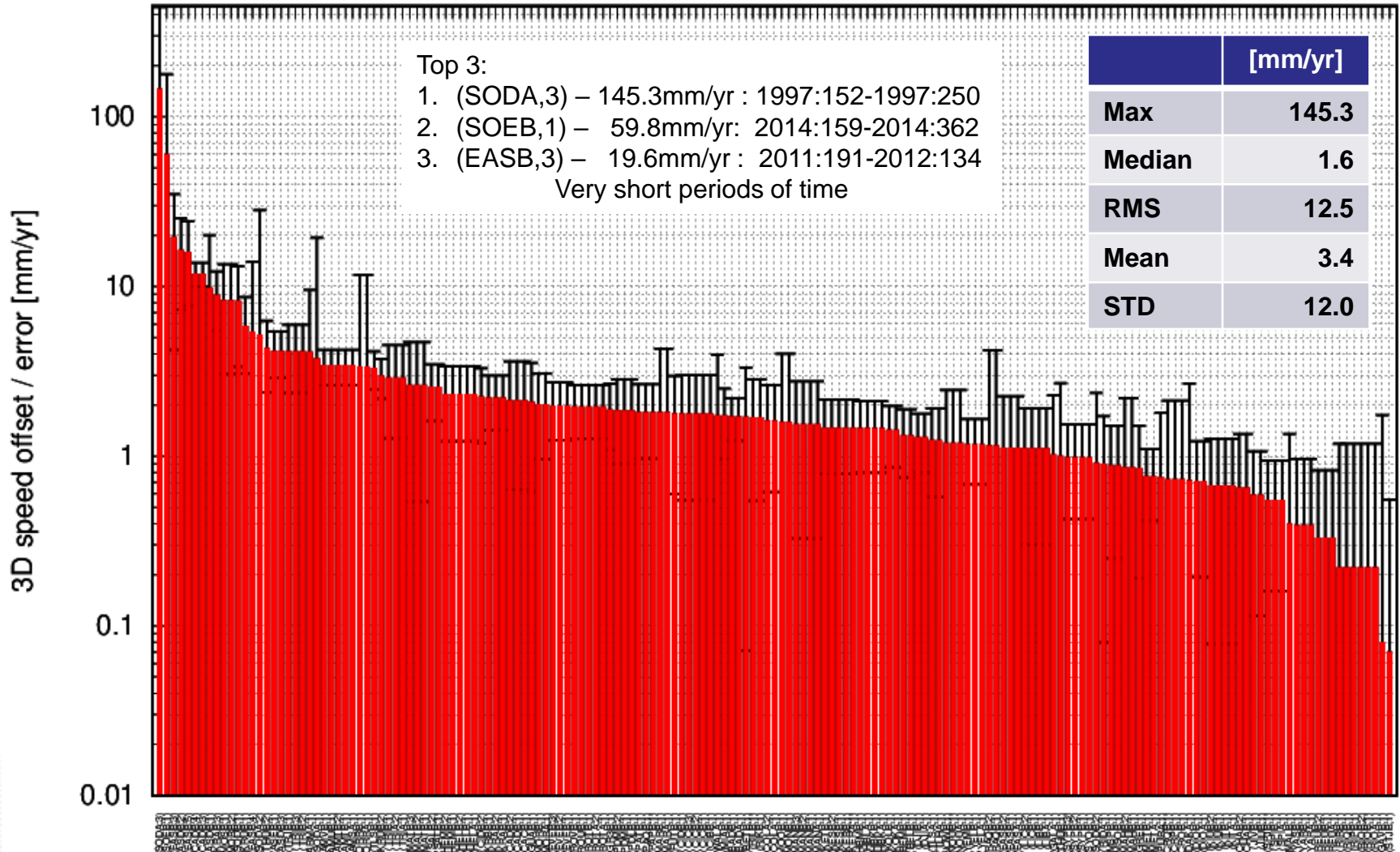
# ids20d05 vs ITRF2014 (PSD included)

Position differences at the mean epoch of the observations  
Differences larger than 10mm only



# ids20d05 vs ITRF2014

## Velocity differences – PSD sites excluded

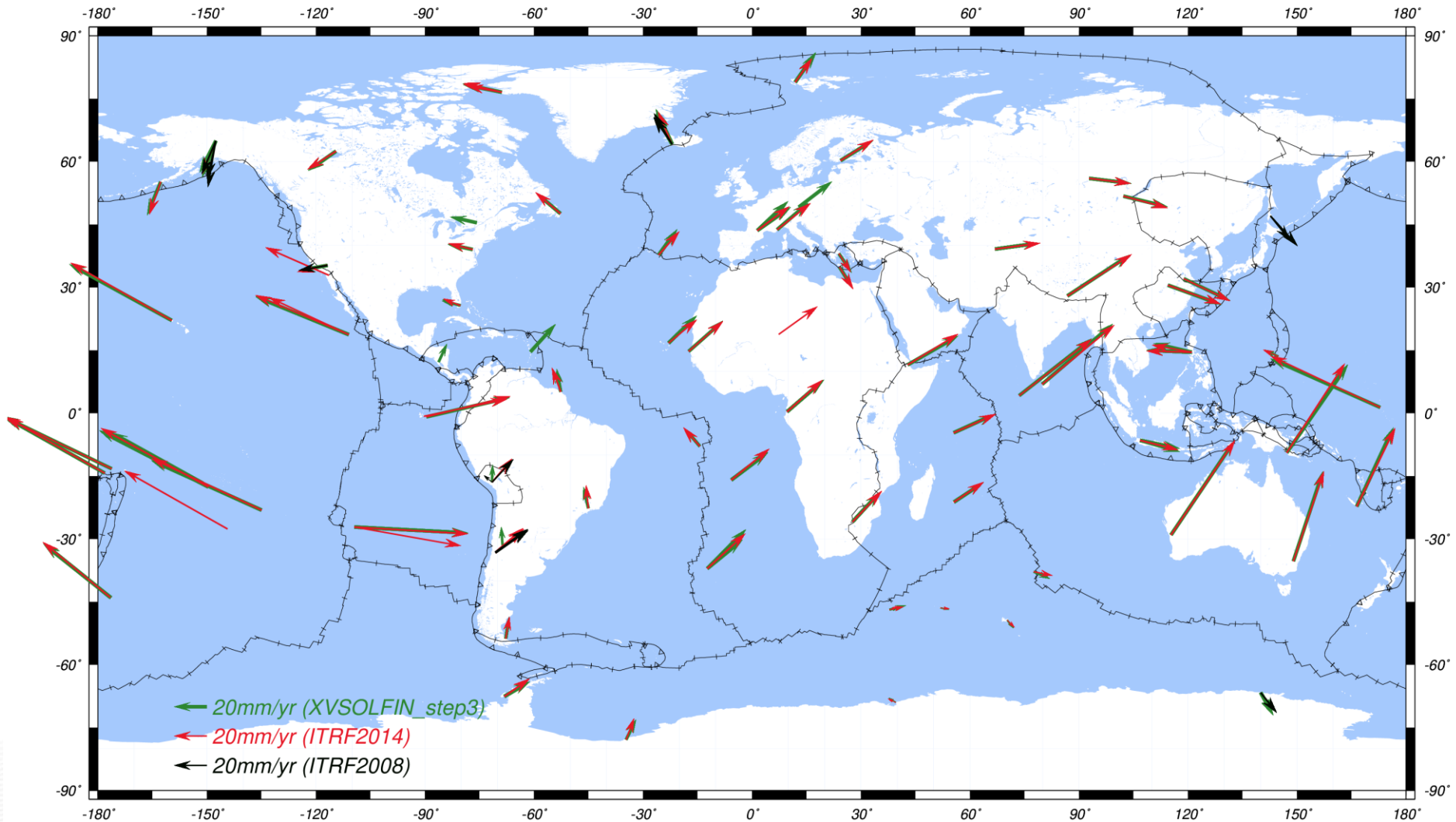




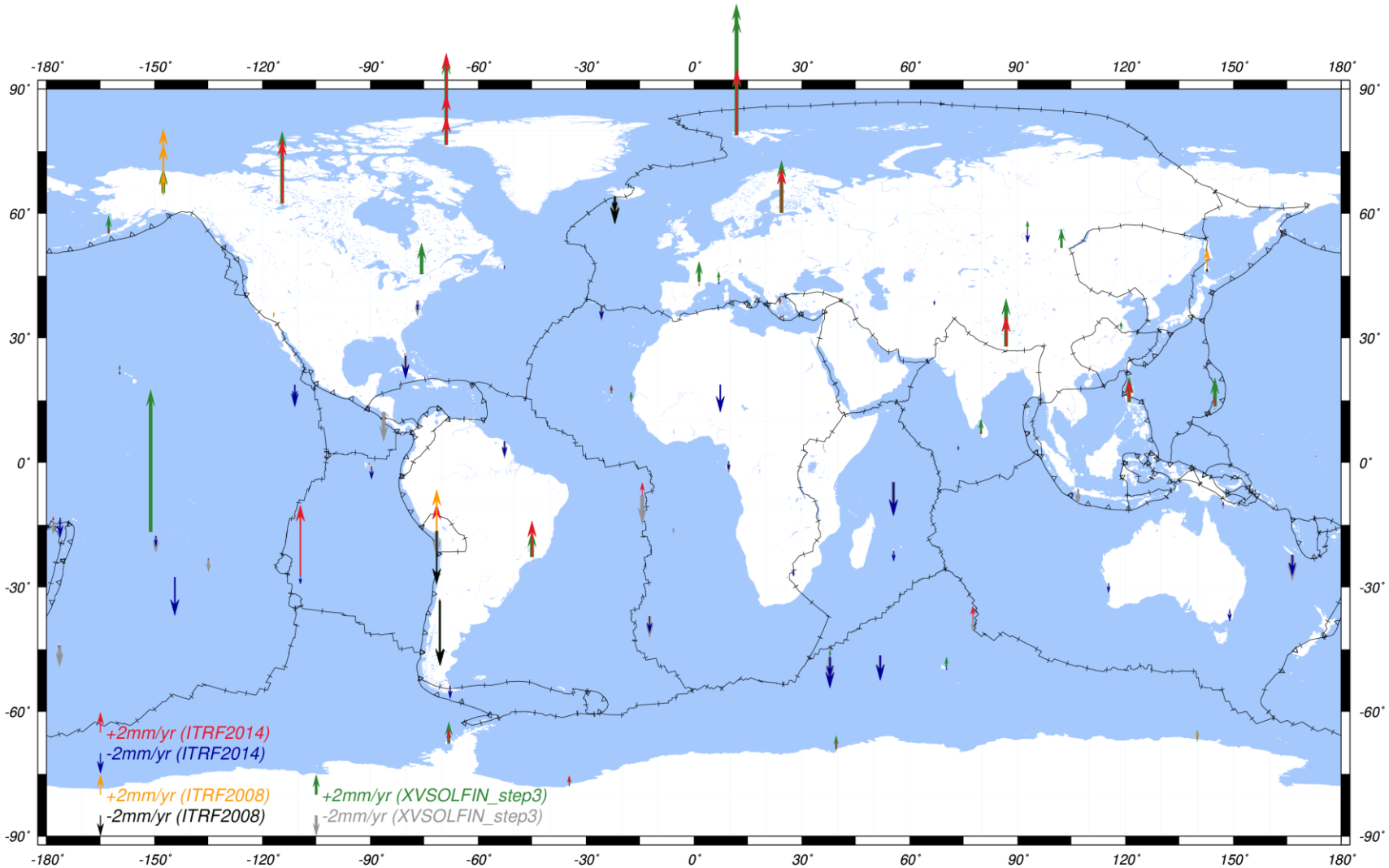


<http://ids-doris.org>

# ids20d05 vs ITRF2014 (ITRF2008 at PSD sites) – Horizontal velocities

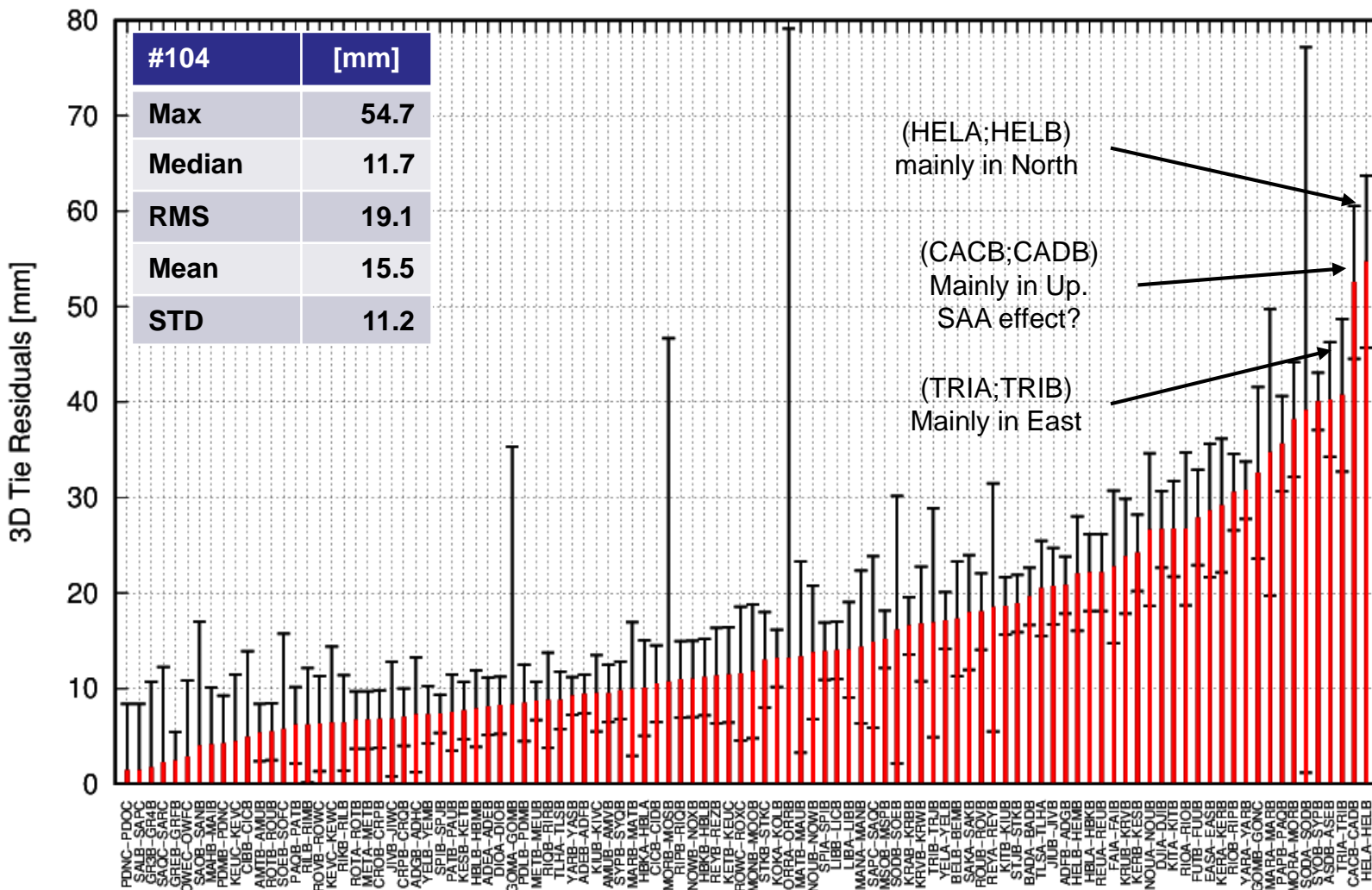


# ids20d05 vs ITRF2014 (ITRF2008 at PSD sites) – Vertical velocities



# ids20d05 vs IGN DORIS-to-DORIS ties

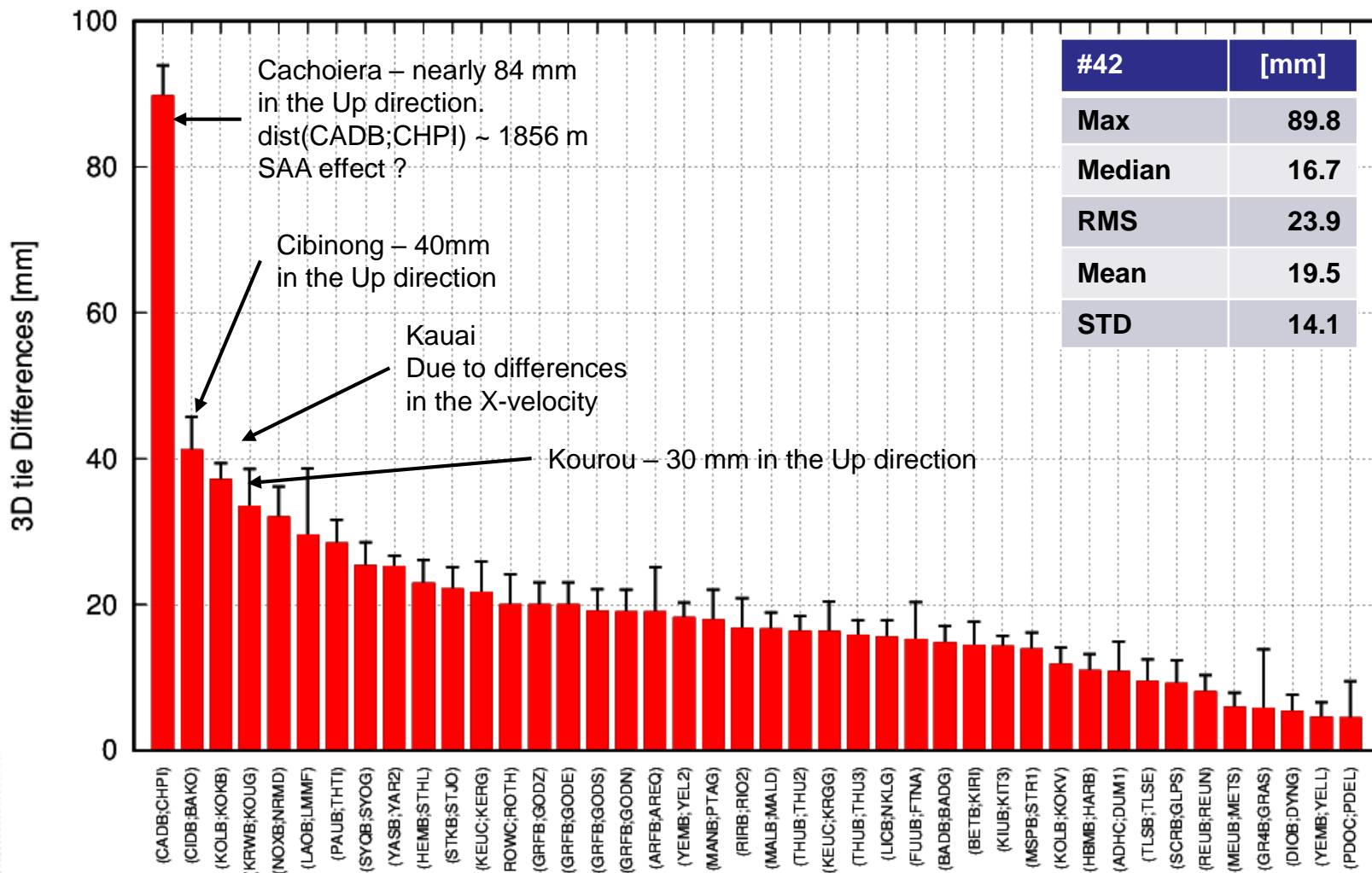
Coordinate differences estimated at the begin of the most recent station



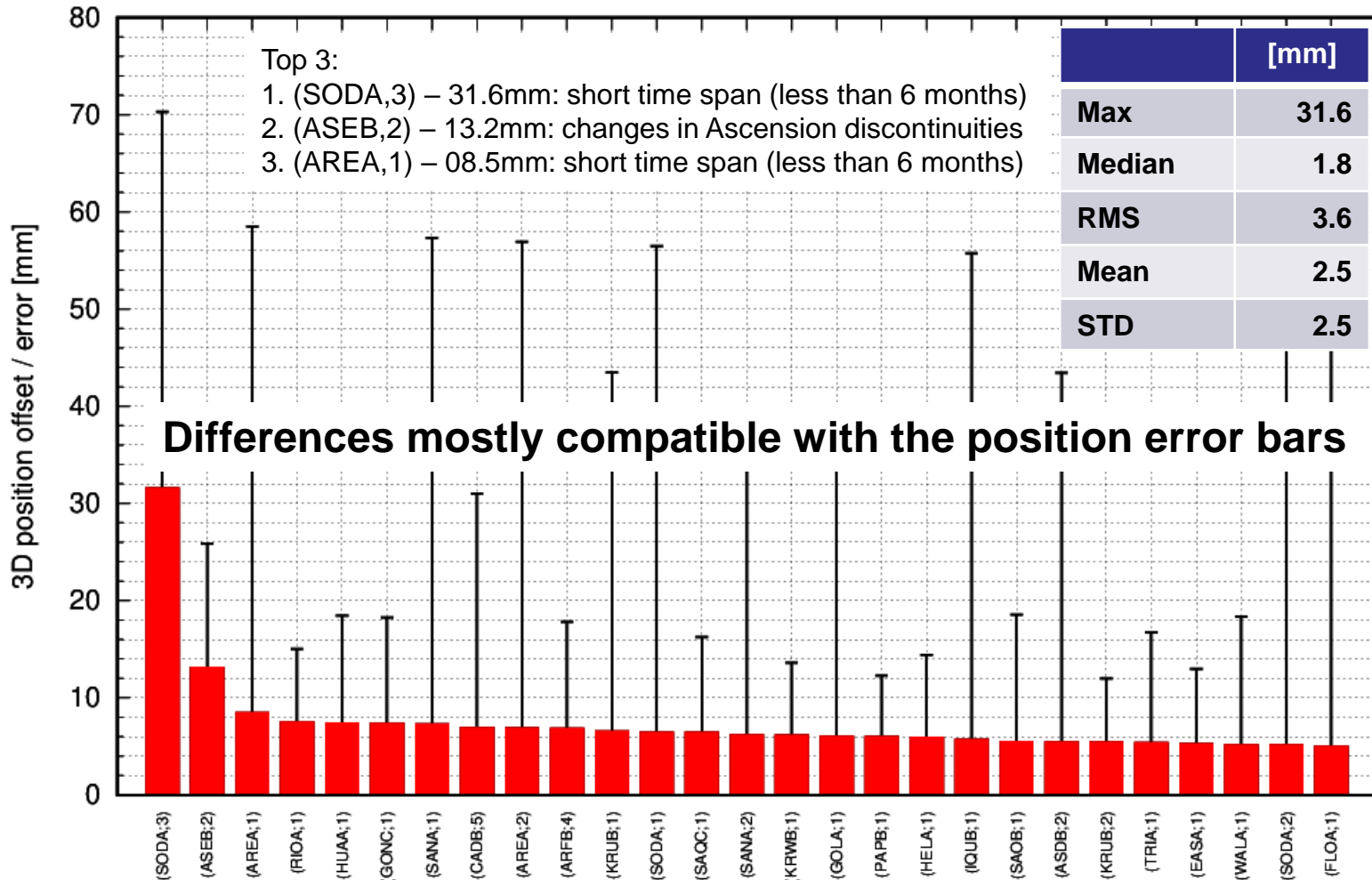
AREA-AREB removed due to earthquakes in between  
 OTTA-OTTB removed due to more than 18 months in between

# ids20d05 vs IGN DORIS-to-GNSS ties

Coordinate differences estimated at max(time\_beg\_GNSS, time\_beg\_DORIS)



Position differences at the mean epoch of the observations  
Differences larger than 5mm only





# ids20d05 vs ids19d04 Velocity differences

Differences larger than 1mm/yr only

