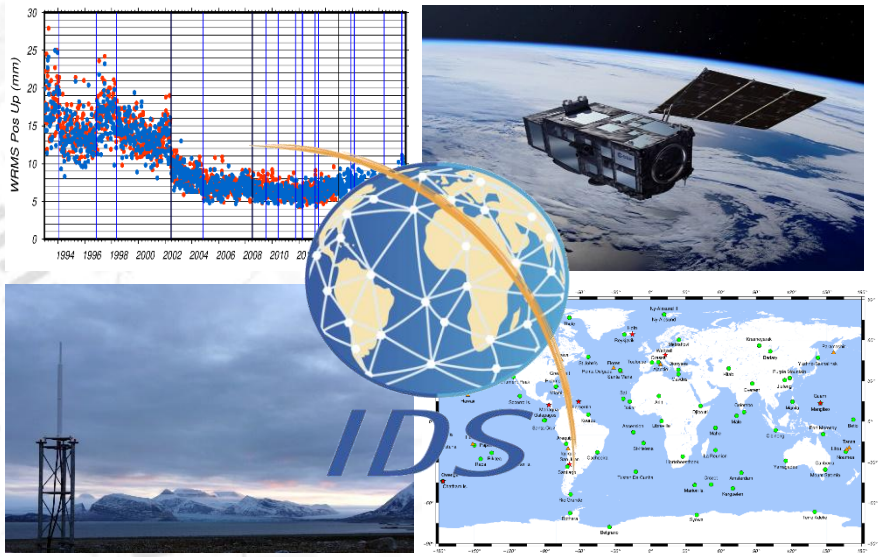
IDS Position/Velocity Cumulative Solution ids26d02

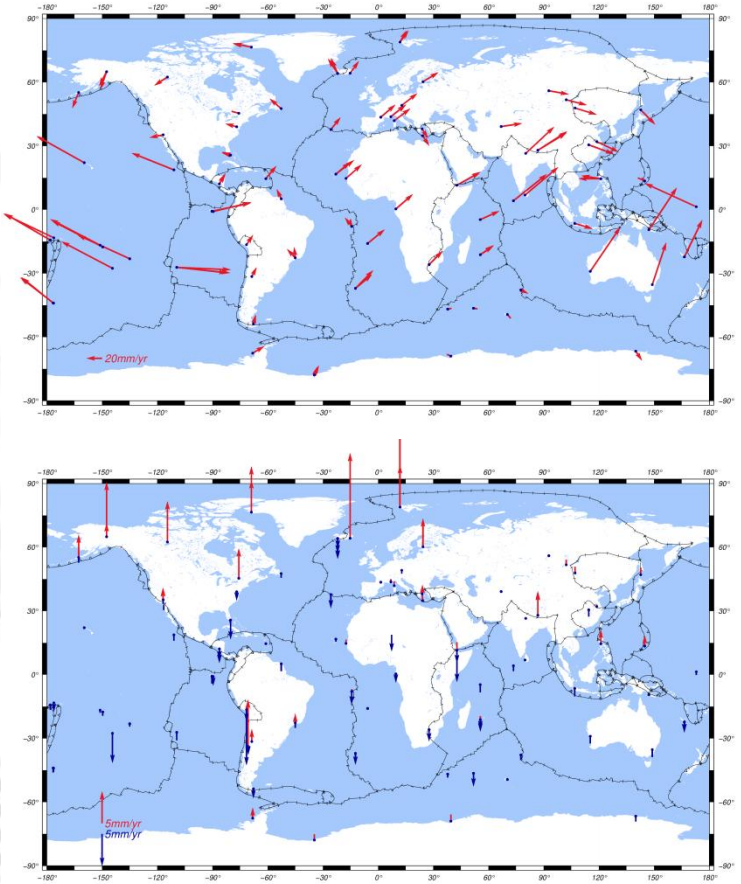
Guilhem Moreaux
Collecte Localisation Satellites

2026/10/26



IDS Cumulative Solution

- **ids26d02:**
  - **Is the output of the stacking of the IDS combined series ids 19&28 from 1993.0 to 2026.5.**
  - **Is aligned onto ITRF2020-u2024.**
  - **Includes annual and semi-annual station position corrections.**
  - **Periodic terms are only estimated for sites with observations after mid-2002 and with at least two years of observations.**



- **ids26d01: cumulative solution as output of the stacking of the ids 19&27 series from 1993.0 to 2026.0.**

- **ids27: IDS contribution to ITRF220-u2025.**
- **ids28 == ids 27 + LOD**

ids26d02 – Velocity Constraints

For sites with less than 2 years of observations.

Site	DORIS station	Reference station	Technique	Source
Ajaccio	AJAB	AJAC	GNSS	ITRF2020
Huahine	HUAA	7123	Laser Ranging	ITRF2020
Kanpur	KANC			DORISmail 1474
Ulaanbaatar	ULAC	ULAB	GNSS	ITRF2020

ids26d02 – Discontinuities

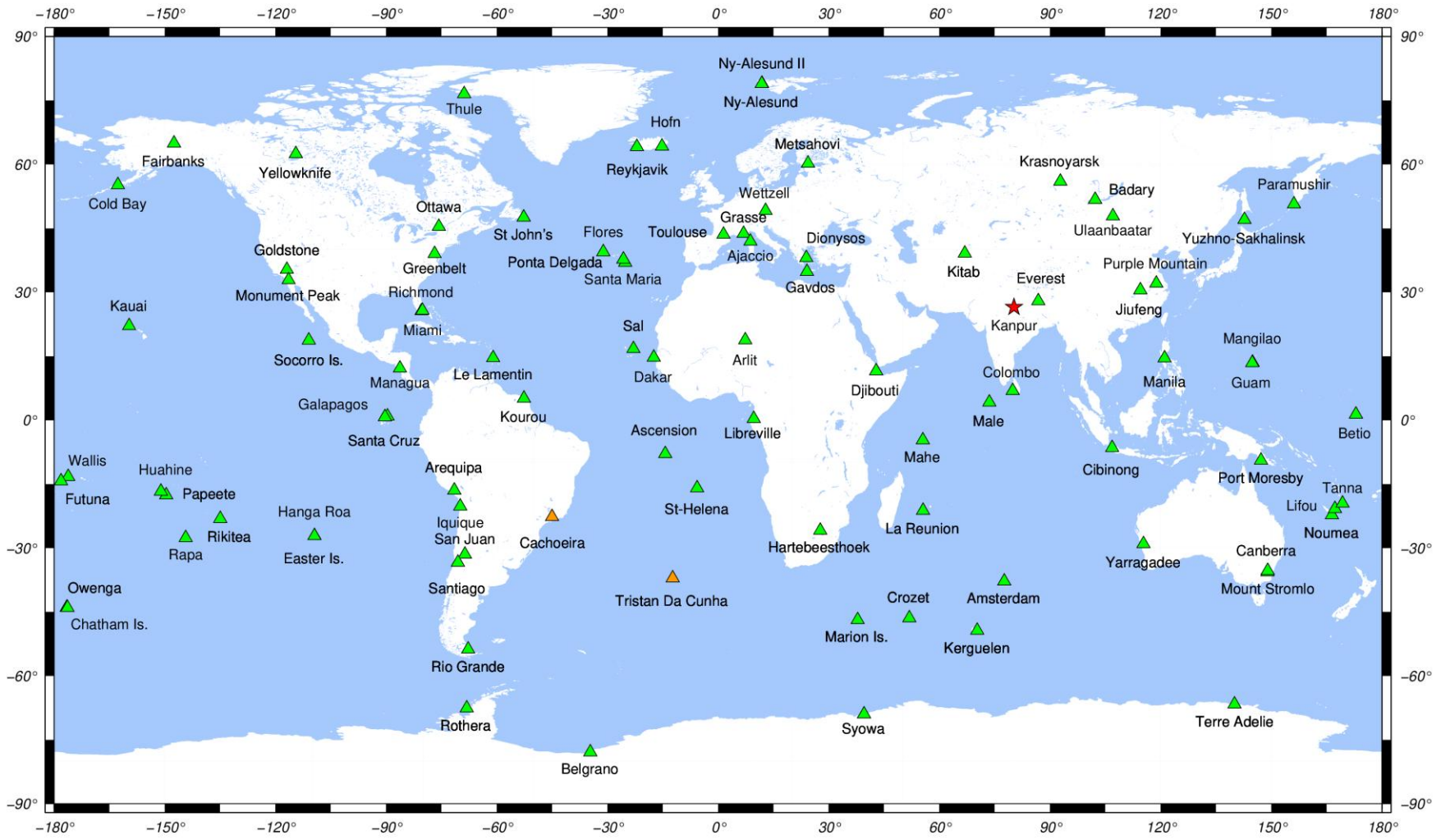
	ids26d01	ids26d02
Observations time span	1993.0-2026.0	1993.0-2026.5
Nb of stations	225	228
Nb of sites	90	91
Discontinuities		
Overall number	140	140
Nb of affected sites	51	51
Nb of affected stations	69	69
With geophysical origin	63	64
With technical origin	26	25
With unknown origin	51	51

Three more stations: CADC (Cachoeira), KANC (Kanpur, new site) and TRJC (Tristan Da Cunha).
Discontinuities: Earthquake near DJIB (Djibouti) in 2010/11/14 replaces discontinuity in 2012/09/14.

ids26d02 – DORIS Station Network

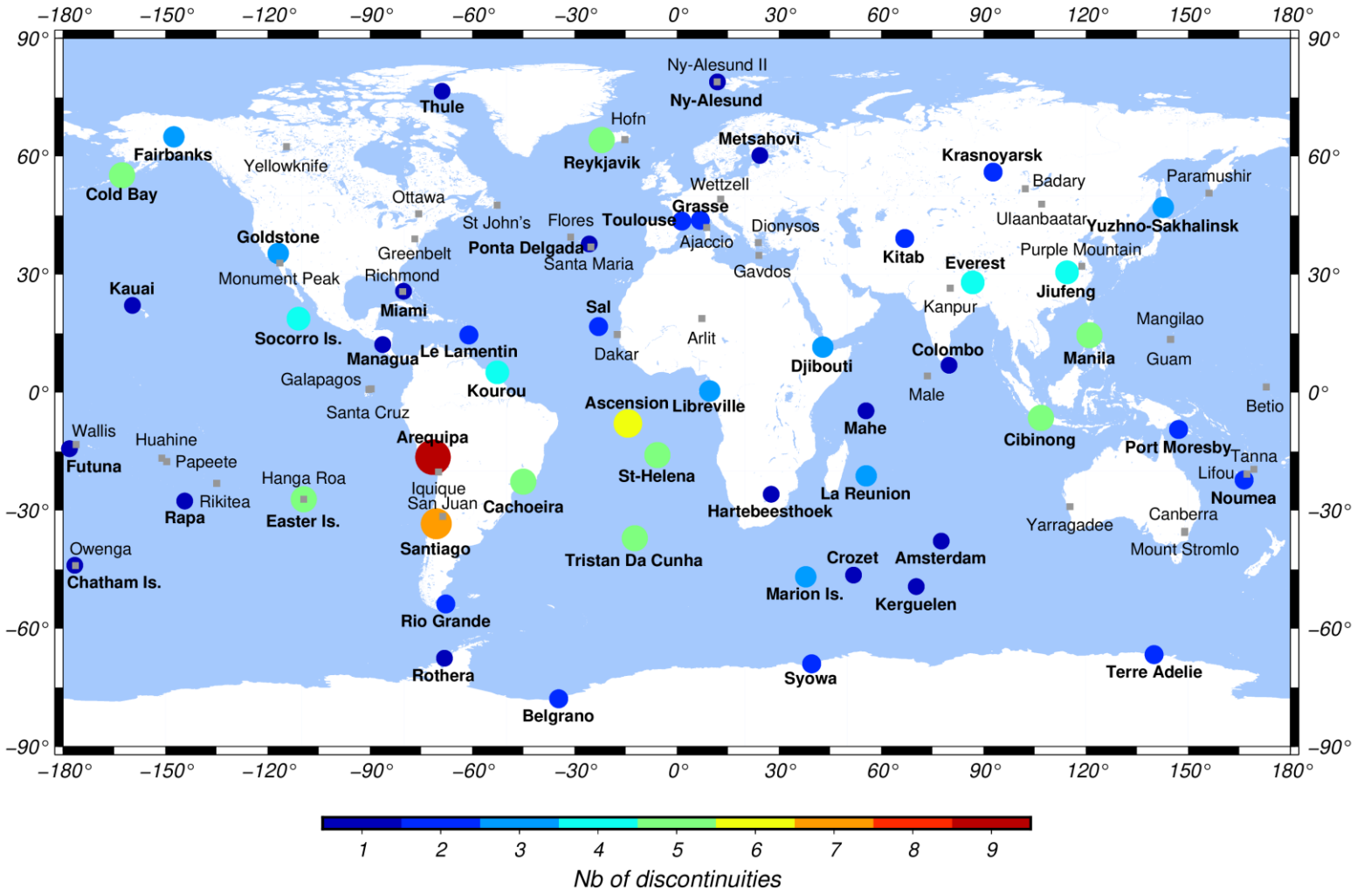
91 DORIS sites – 228 DORIS stations

Three more stations since ids26d01: CADC (Cachoeira), KANC (Kanpur) and TRJC (Tristan Da Cunha).

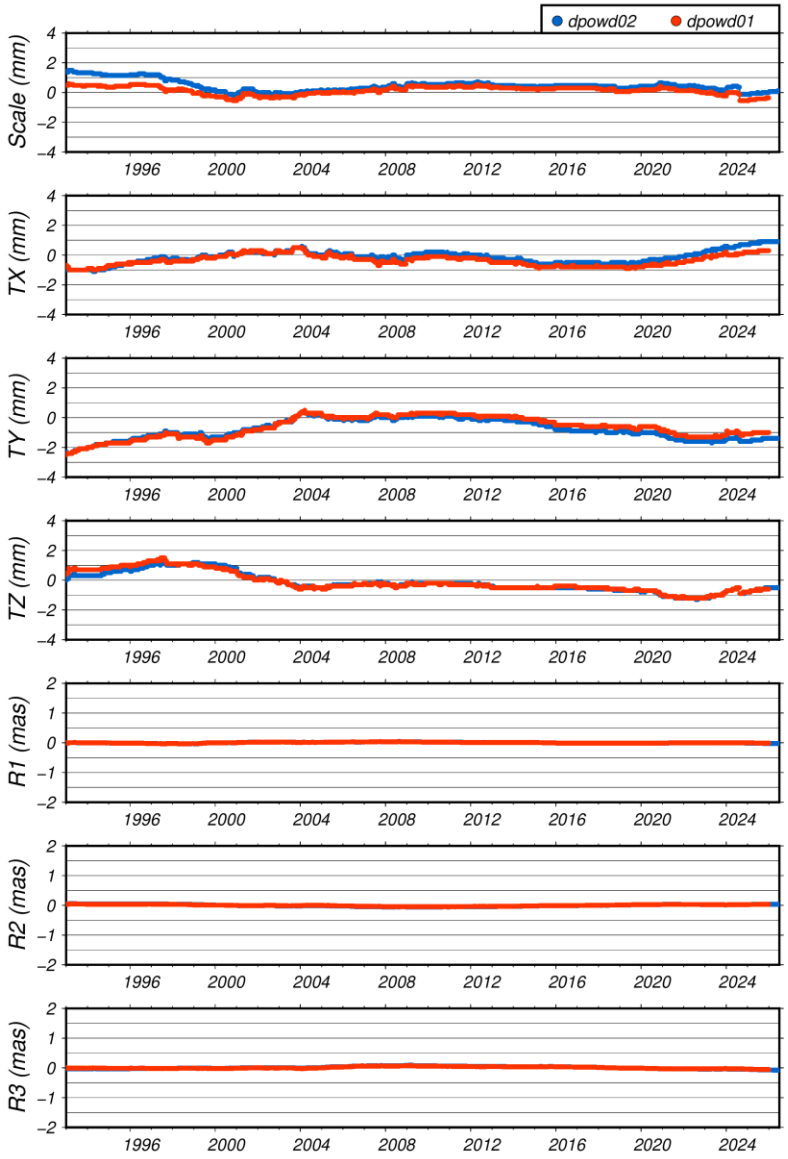


ids26d02 – Discontinuities

Number of discontinuities by DORIS site. Sites with discontinuities are in boldface.
Sites with no discontinuity are indicated with grey squares.



ids26d02 vs ITRF2020-u2024



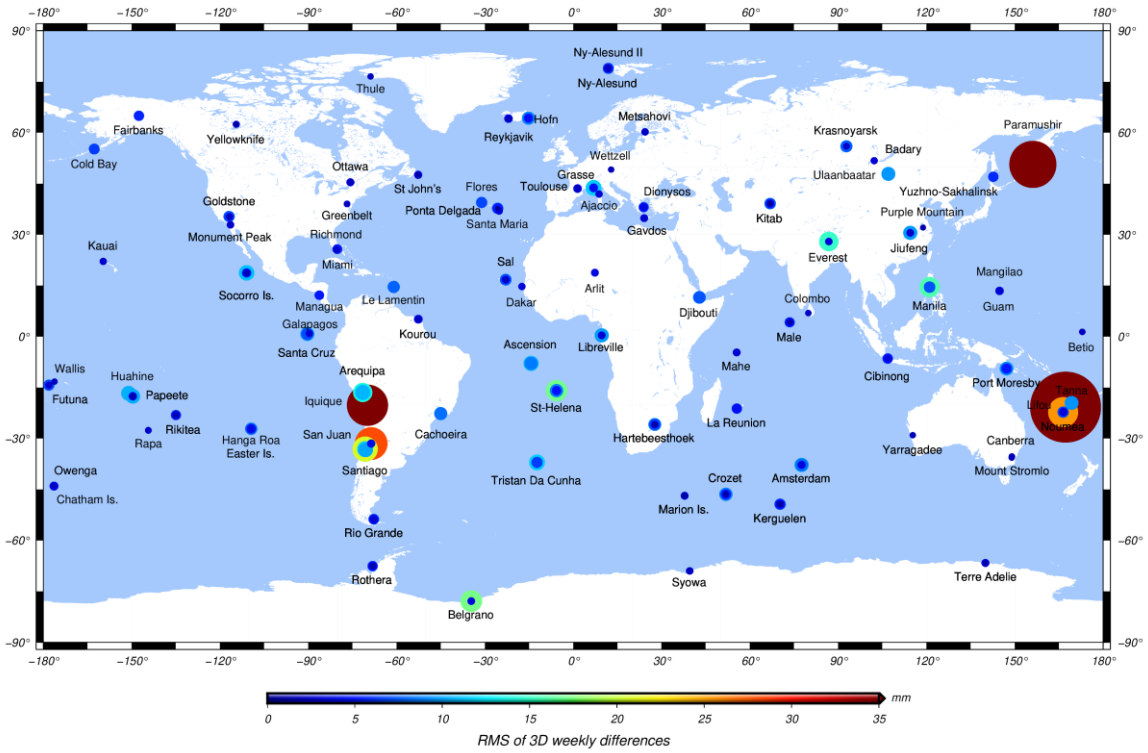
Helmert parameters of the weekly propagations of ids26d01 and ids26d02 wrt ITRF2020-u2024, respectively, without annual and semi-annual corrections.

	ids26d01 wrt ITRF2020-u2024			ids26d02 wrt ITRF2020-u2024		
	mean	Std	rms	mean	Std	rms
Sc [mm]	**0.13**	**0.28**	**0.31**	**0.46**	**0.38**	**0.60**
Tx [mm]	**-0.35**	**0.37**	**0.51**	**-0.13**	**0.43**	**0.45**
Ty [mm]	**-0.66**	**0.71**	**0.97**	**-0.81**	**0.67**	**1.04**
Tz [mm]	**-0.14**	**0.68**	**0.70**	**-0.17**	**0.64**	**0.66**
R1 [mas]	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**
R2 [mas]	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.03**
R3 [mas]	**0.01**	**0.03**	**0.03**	**0.01**	**0.04**	**0.04**

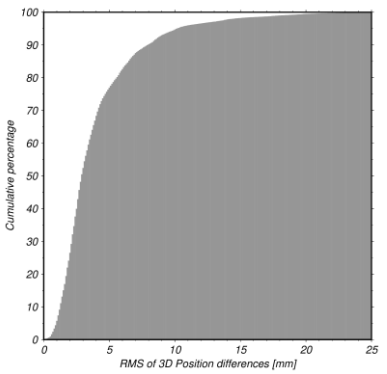
Similar results for ids26d02 and ids25d01.

ids26d02 vs ITRF2020-u2024

Weekly station coordinate differences between ids26d02 and ITRF2020-u2024 from 1993.0 to 2026.5.
Without annual and semi-annual corrections.



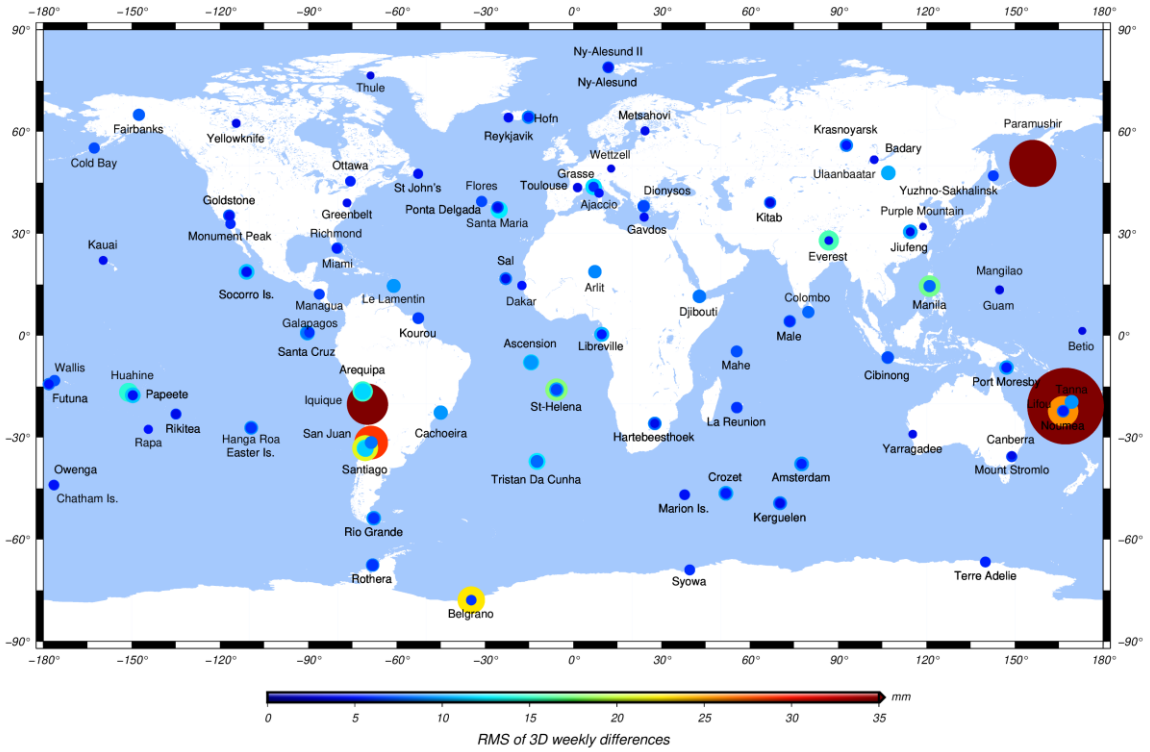
	[mm]
Max	112.5
Median	2.9
RMS	6.5
Mean	4.2
STD	4.9



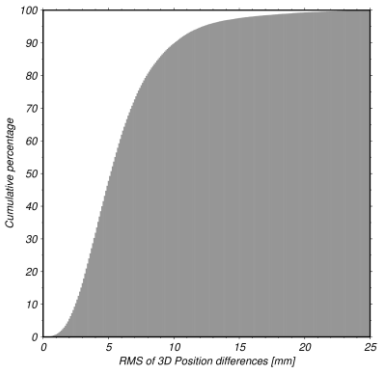
94% of the weekly 3D differences are smaller than 10 mm.
As expected, largest differences are for sites/stations with very few observations (Paramushir, Iquique, Lifou, Noumea-NOWB, San-Juan-SJUC).
Differences @ Belgrano (BEMB) are due to different discontinuities.

ids26d02 vs ITRF2020-u2024

Weekly station coordinate differences between ids26d02 and ITRF2020-u2024 from 1993.0 to 2026.5.
With annual and semi-annual corrections.



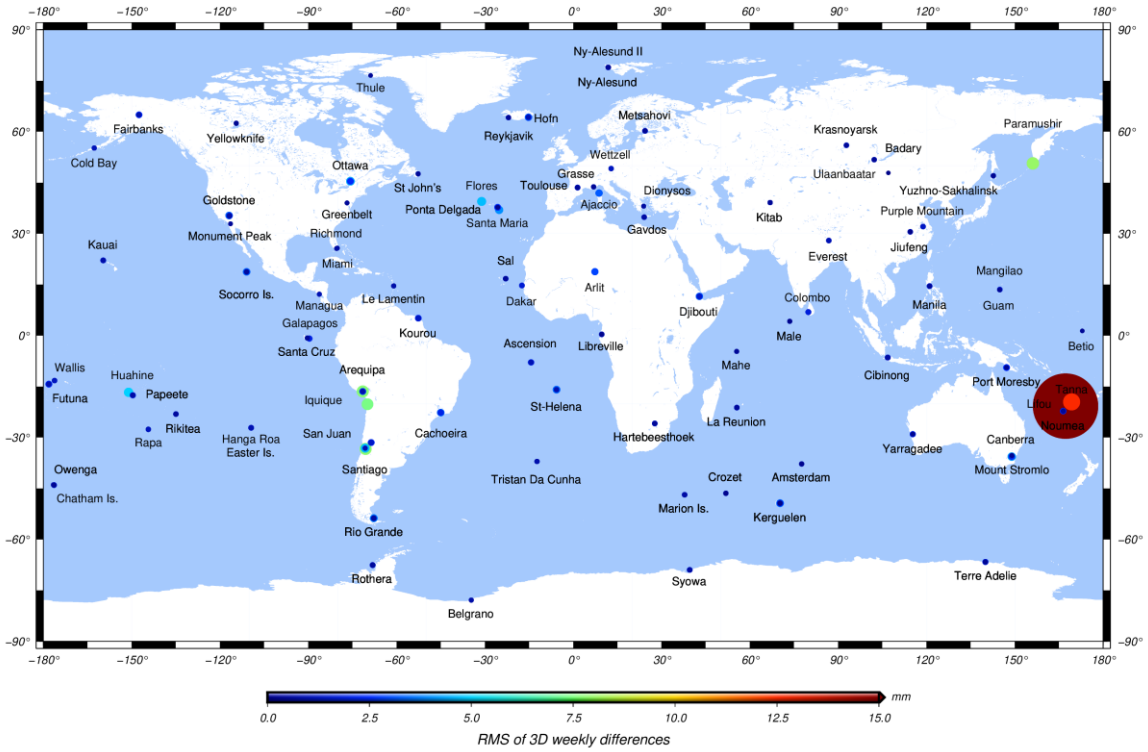
	[mm]
Max	141.8
Median	5.2
RMS	8.0
Mean	6.2
STD	5.1



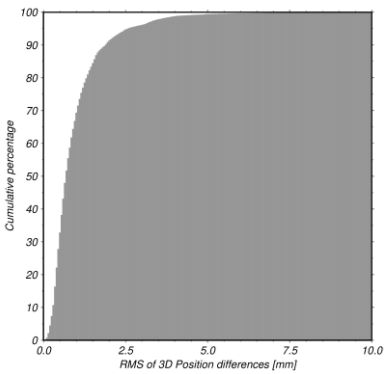
89% of the weekly 3D differences are smaller than 10 mm.
As expected, largest differences are due to very short time spans (Paramushir, Iquique, Lifou, Noumea-NOWB).
Differences @ Belgrano (BEMB) are due to different discontinuities.

ids26d02 vs ids26d01

Weekly station coordinate differences between ids26d02 and ids26d01 from 1993.0 to 2026.5.
Without annual and semi-annual corrections.



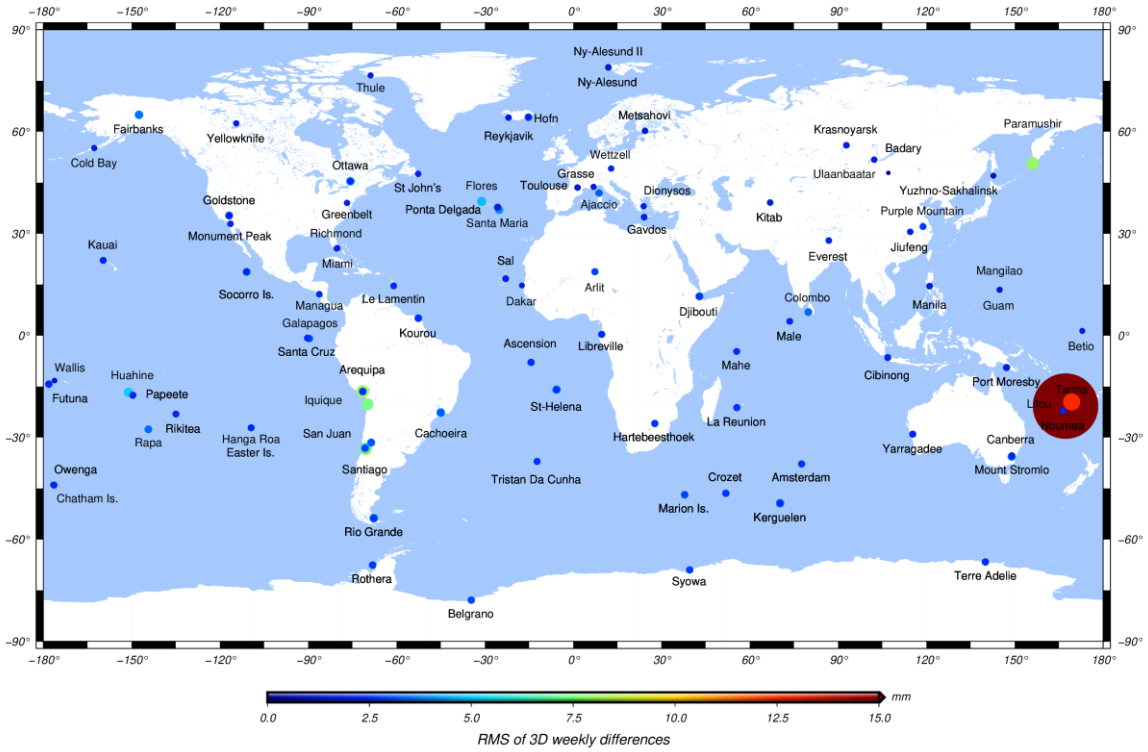
	[mm]
Max	105.0
Median	0.7
RMS	3.3
Mean	1.1
STD	3.1



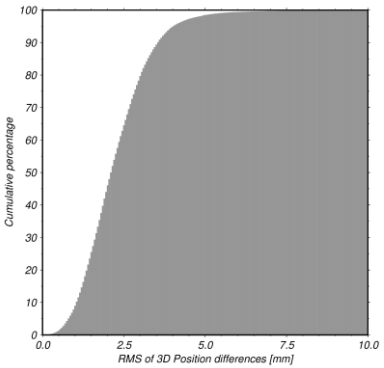
95% of the weekly 3D differences are smaller than 2.5 mm. Largest differences are for station LIFB (Lifou) with very few weeks of observations (21 weeks).

ids26d02 vs ids26d01

Weekly station coordinate differences between ids26d02 and ids26d01 from 1993.0 to 2026.0.
With annual and semi-annual corrections.



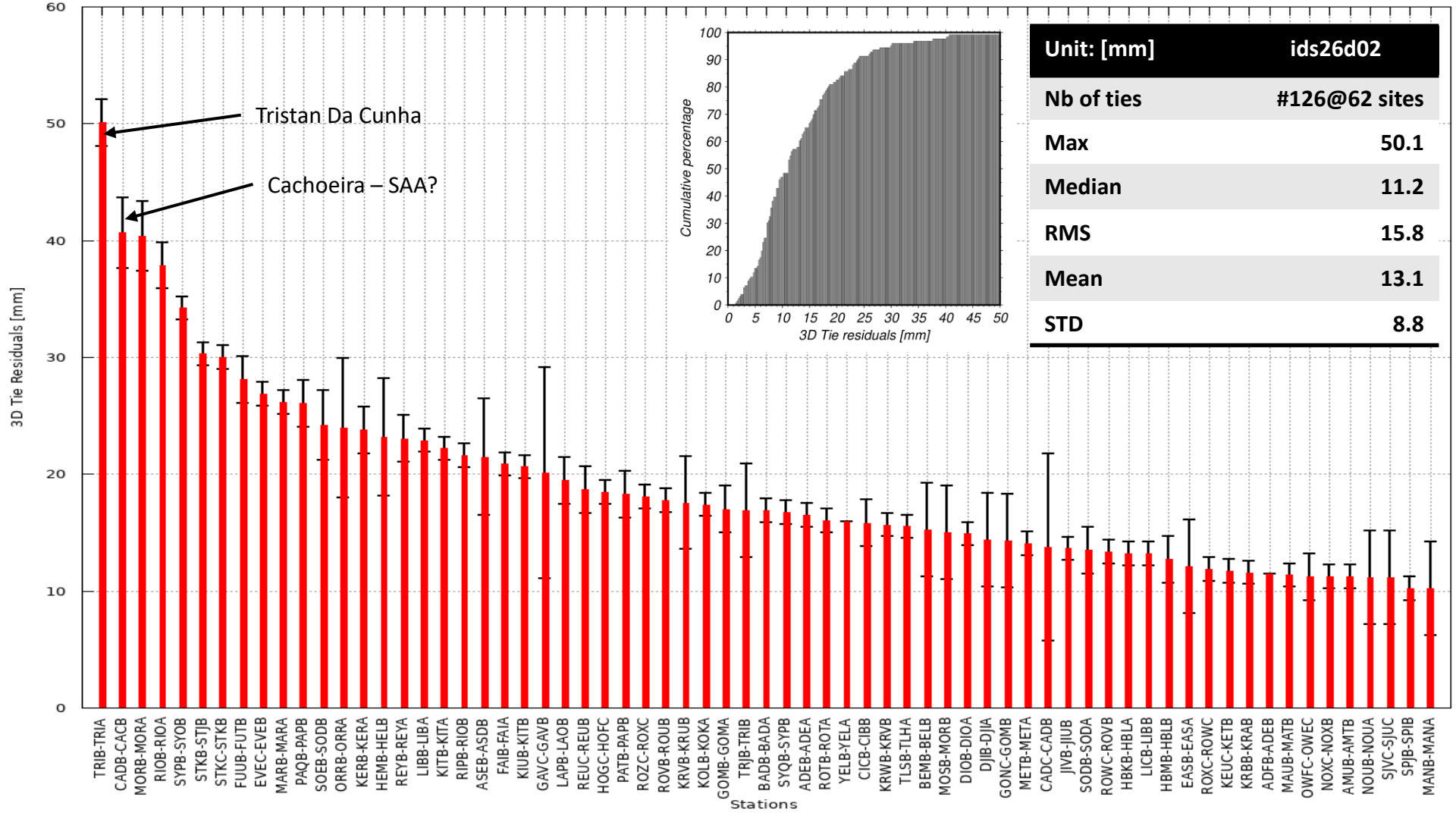
	[mm]
Max	104.9
Median	2.1
RMS	4.0
Mean	2.4
STD	3.1



98% of the weekly 3D differences are smaller than 5 mm.
Largest differences are for station LIFB (Lifou).

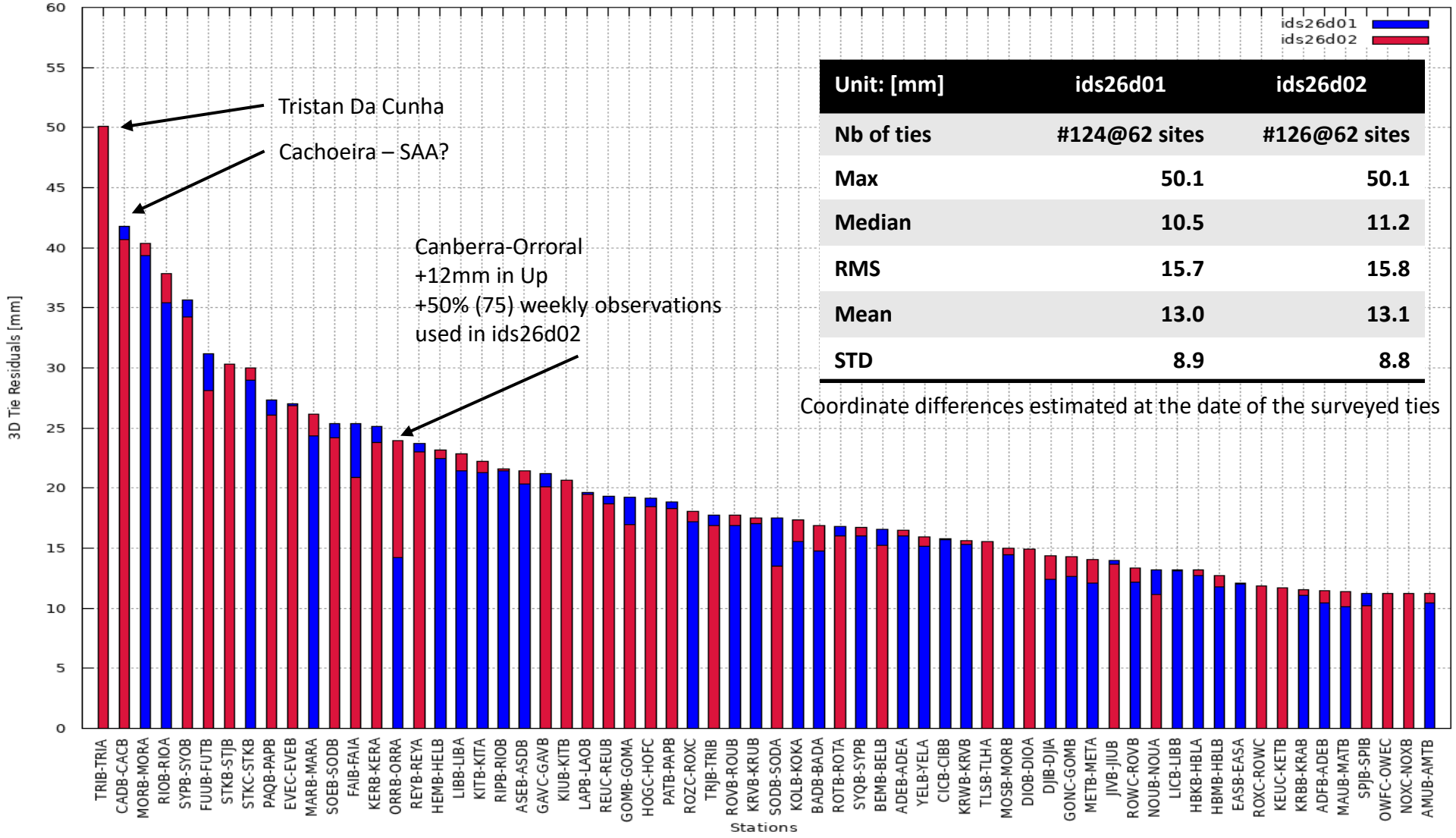
ids26d02 vs IGN DORIS to DORIS Ties

Coordinate differences estimated at the date of the surveyed ties



Unit: [mm]	ids26d02
Nb of ties	#126@62 sites
Max	50.1
Median	11.2
RMS	15.8
Mean	13.1
STD	8.8

ids26d02 vs ids26d01
IGN DORIS to DORIS Tie Residuals



Unit: [mm]	ids26d01	ids26d02
Nb of ties	#124@62 sites	#126@62 sites
Max	50.1	50.1
Median	10.5	11.2
RMS	15.7	15.8
Mean	13.0	13.1
STD	8.9	8.8

Coordinate differences estimated at the date of the surveyed ties

Conclusions

- **ids26d02:**
  - **Is the output of the stacking of the IDS combined series ids 19&28 from 1993.0 to 2026.5.**
  - **Is aligned onto ITRF2020-u2024.**
  - **Includes annual and semi-annual station position corrections.**
  - **Periodic terms are only estimated for sites with observations after mid-2002 and with at least two years of observations.**

- **Internal evaluation of ids26d02 did not reveal any issue ➔ realization of DPOD2020 v7.0 will start soon.**

