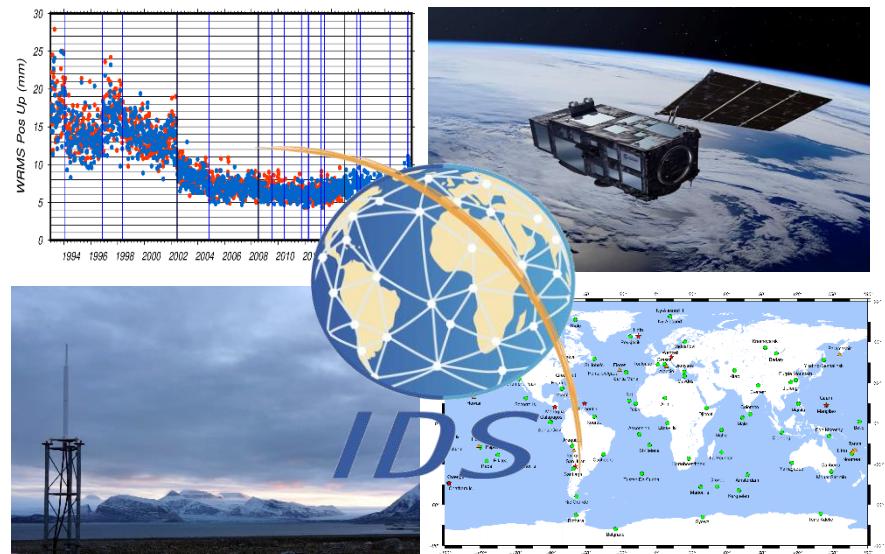


Status of the IDS Combined Solution

Guilhem Moreaux (CLS)





Status of the IDS Operational Series

AC	Series	Comments
ESA	13	Up to 2021.0
	15	Since 2021.0
GOP	67	Up to 2022.75
	68	Since 2022.75 – GOP 67 + HY-2C/D + Sentinel-6A
GRG	52	Since 2011 doy 275 Sentinel-6A and HY-2C since 2020:355 – HY-2D since 2021:220 SAA mitigation strategy on HY-2A
	53	Extended backward to 2020:362. New Earth gravity field and switch to DPOD2020 as apriori. SAA mitigation strategy for HY-2C and Sentinel-6A.
GSC	53	Since 2011:310 – GSC 52 + SAA mitigation strategy on HY-2A
IDS	19	ESA 13 / GOP 67 / GRG 43 / GSC 52
	20	ESA 15 / GOP 67-68* / GRG 43-52* / GSC 52-53* *since 2022:282



Status of the IDS Associated AC Series

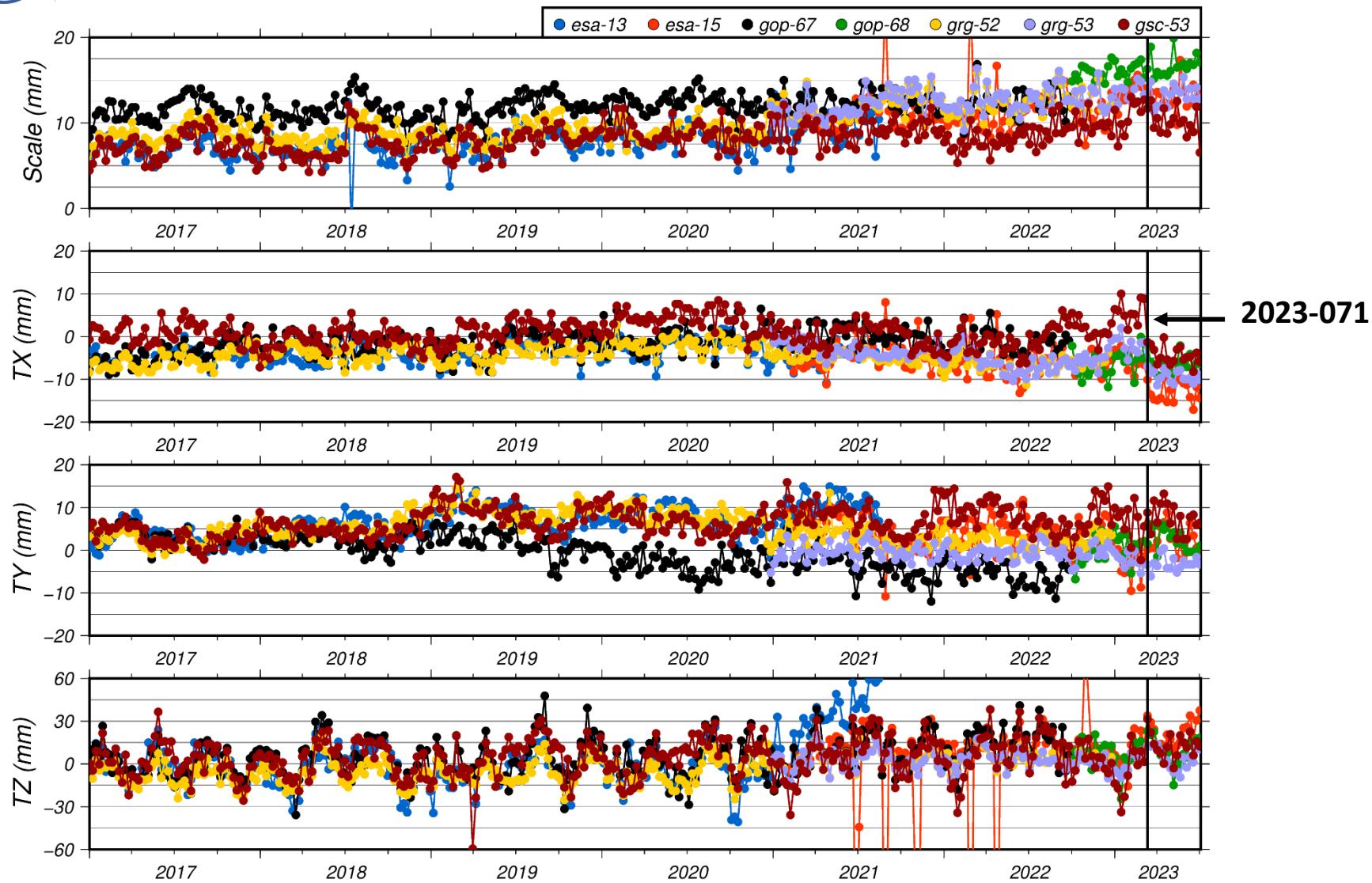
AC	Series	Comments
GFZ	Single	Cryosat-2, Jason-3, Saral, Sentinel-3A/3B from 2020.0 to 2023.0 Sentinel-6A from 2021.0 to 2023.0
	01	From 2020.0 to 2023.0 – All satellites with single satellite solutions.
IGN		See contribution to ITRF2020 update
INA		See contribution to ITRF2020 update



DORIS missions in the IDS Operational Series

	ESA	GOP	GRG	GSC
Cryosat-2	2010:150 -	2010:150 -	2010:171 -	2010:157 -
HY-2A	2011:275 - 2020:257	2011:268 – 2020:257	2011:275 – 2020:257	2011:311 – 2020:250
HY-2C		2022:275 -	2020:355 -	
HY-2D		2022:275 -	2021:220 -	
Jason-2	2008:195 - 2018:357	2008:230 – 2019:251	2008:195 – 2019:251	2008:195 – 2019:258
Jason-3	2016:052 -	2016:045 -	2016:045 -	2016:066 -
Saral	2014:005 -	2013:069 -	2013:076 -	2013:076 -
Sentinel-3A	2016:073 -	2016:073 -	2016:066 -	2016:066 -
Sentinel-3B	2018:126 -	2018:154 -	2018:133 -	2018:161 -
Sentinel-6A	2021:032 -	2022:275 -	2020:355 -	

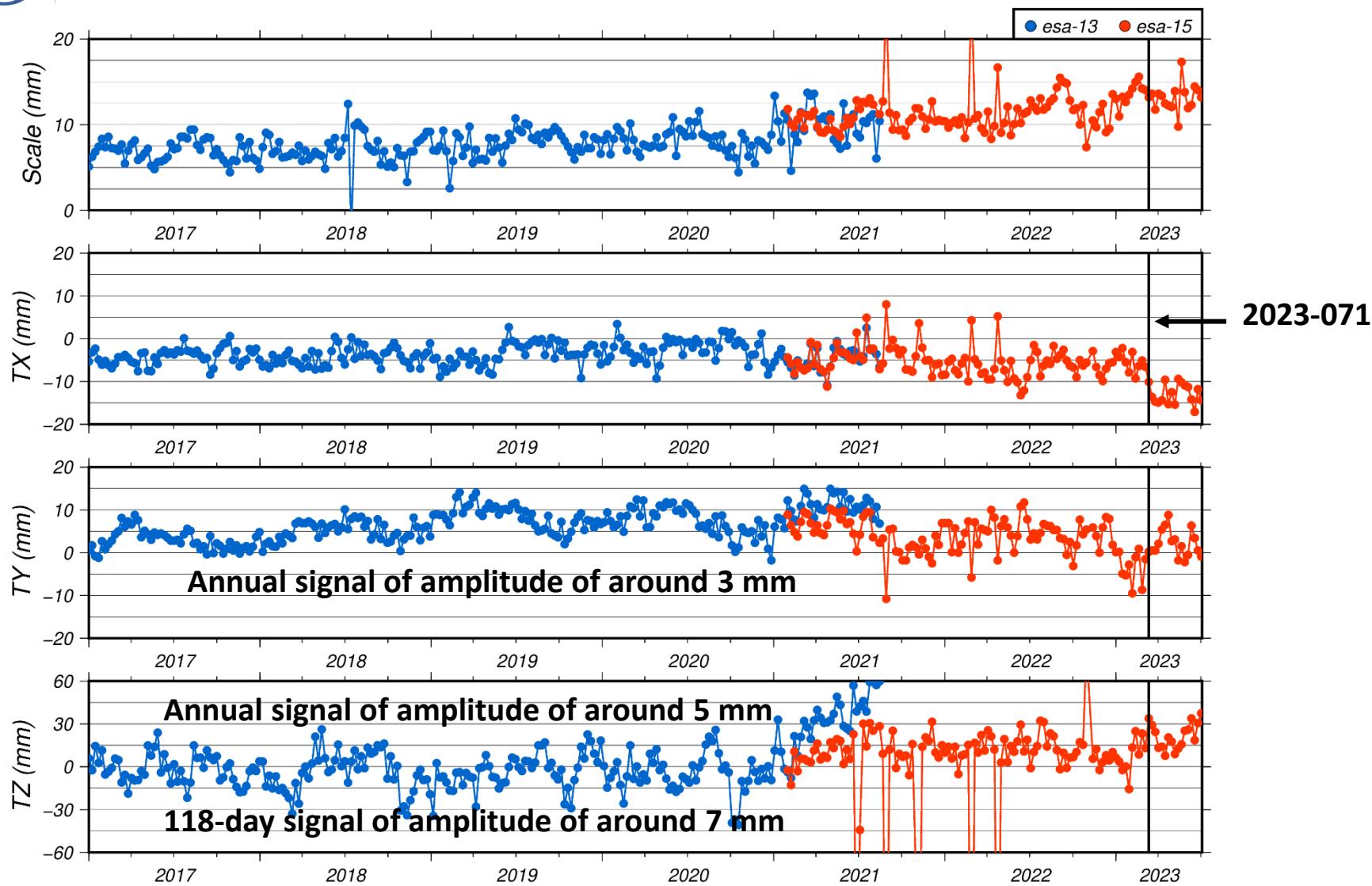
Helmert parameters wrt DPOD2020 v1.3





Helmert parameters wrt DPOD2020 v1.3

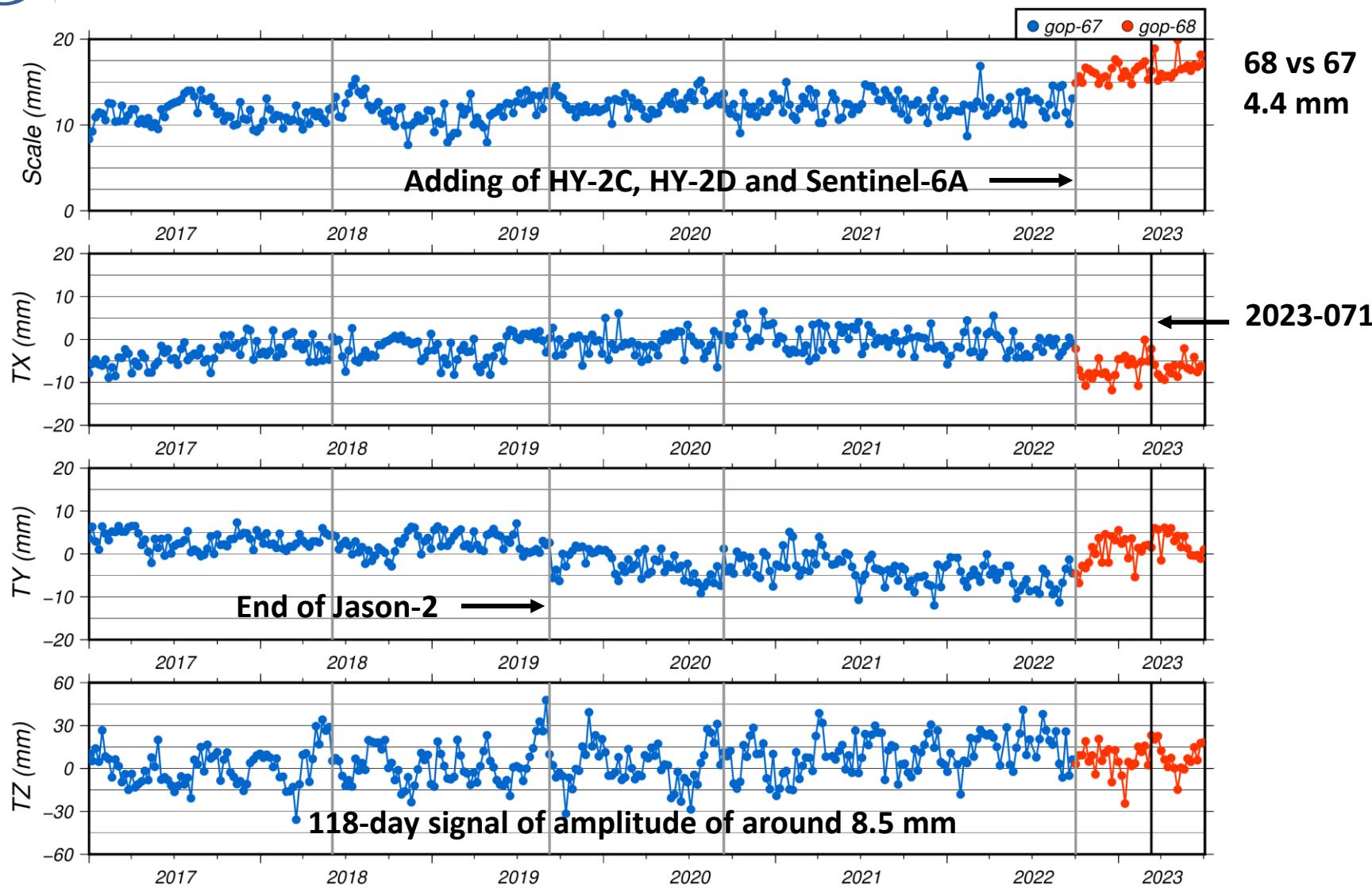
ESA 13-15





Helmert parameters wrt DPOD2020 v1.3

GOP 67-68



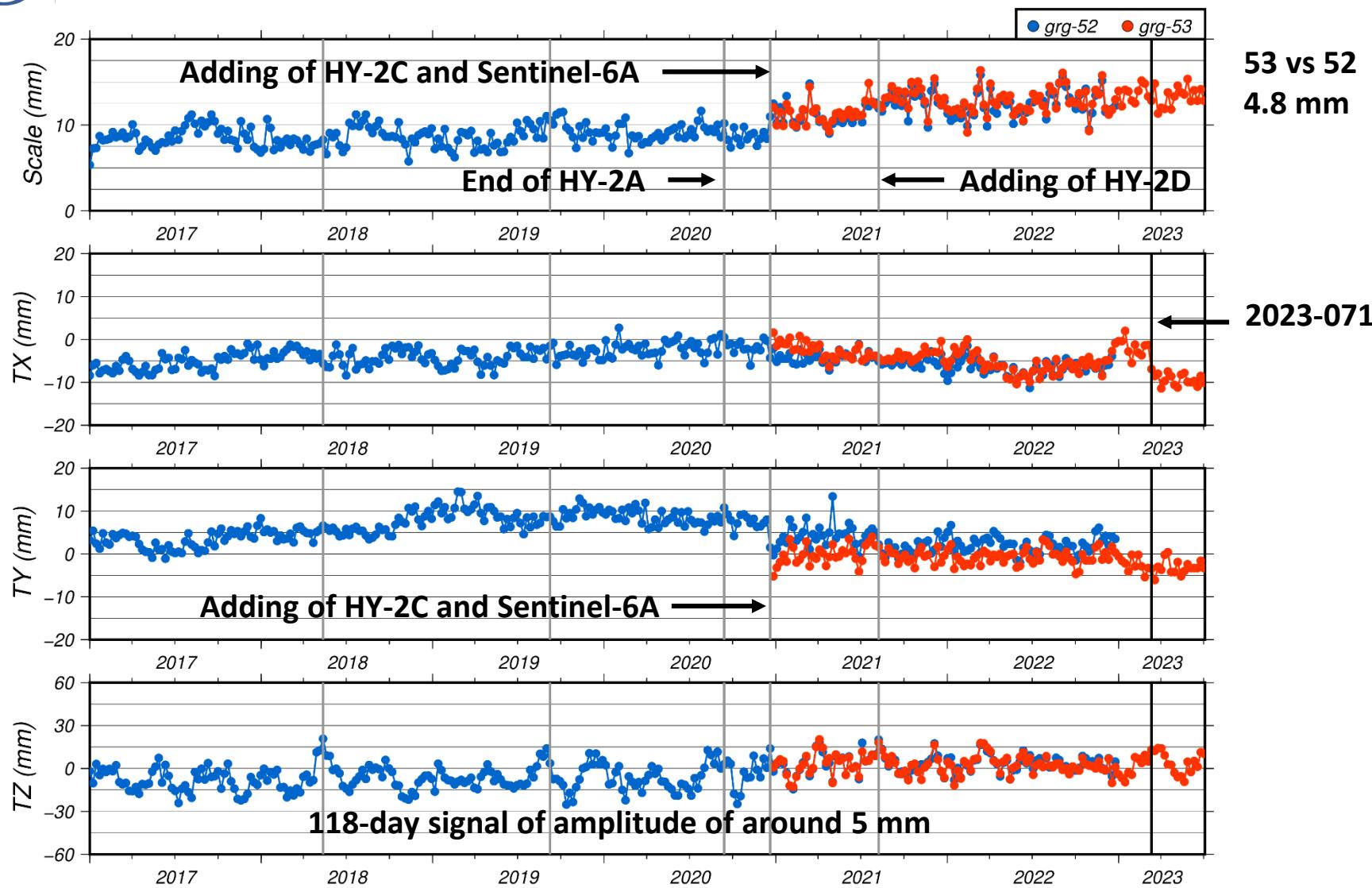
68 vs 67
4.4 mm

2023-071



Helmert parameters wrt DPOD2020 v1.3

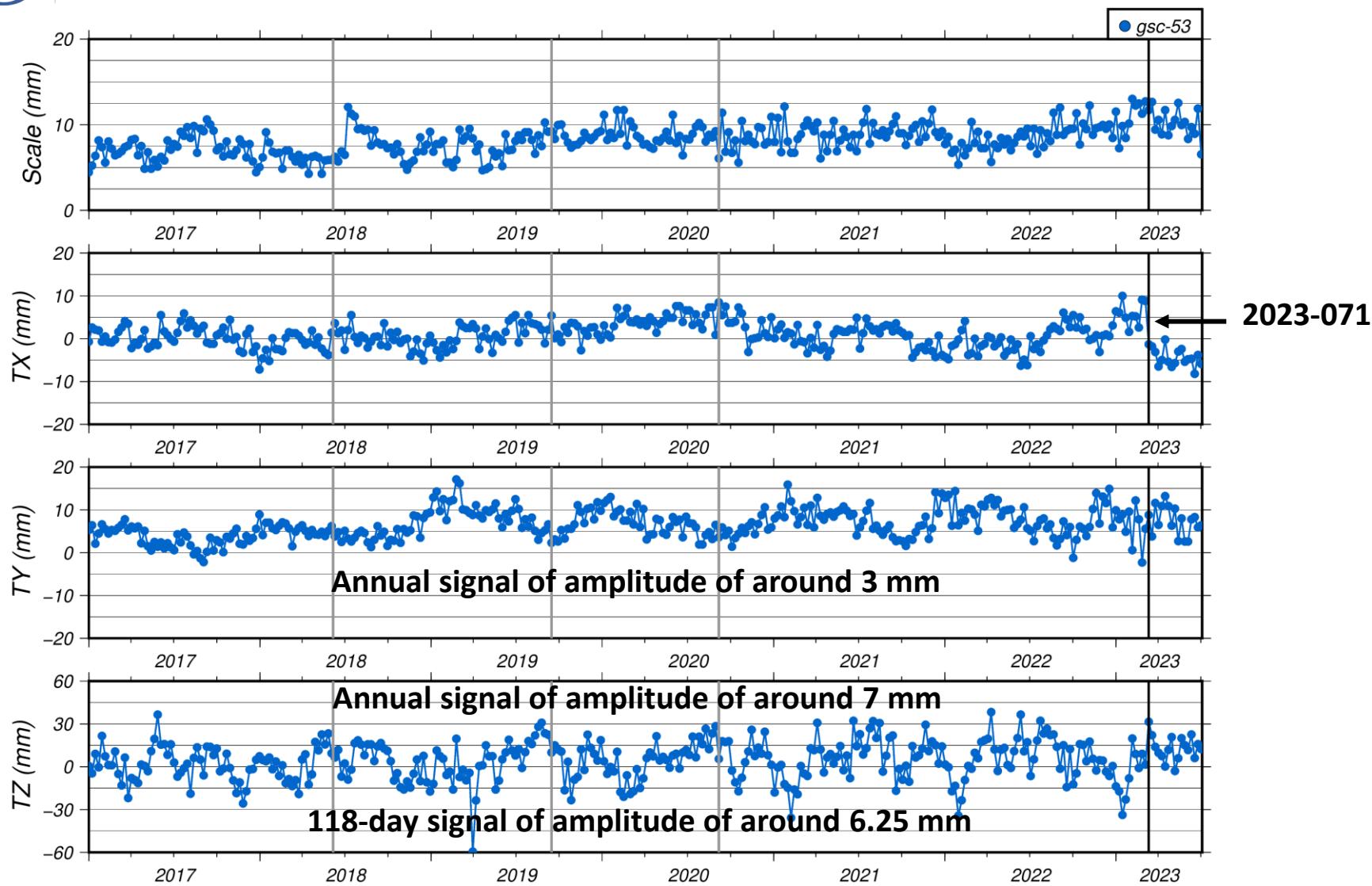
GRG 52-53





Helmert parameters wrt DPOD2020 v1.3

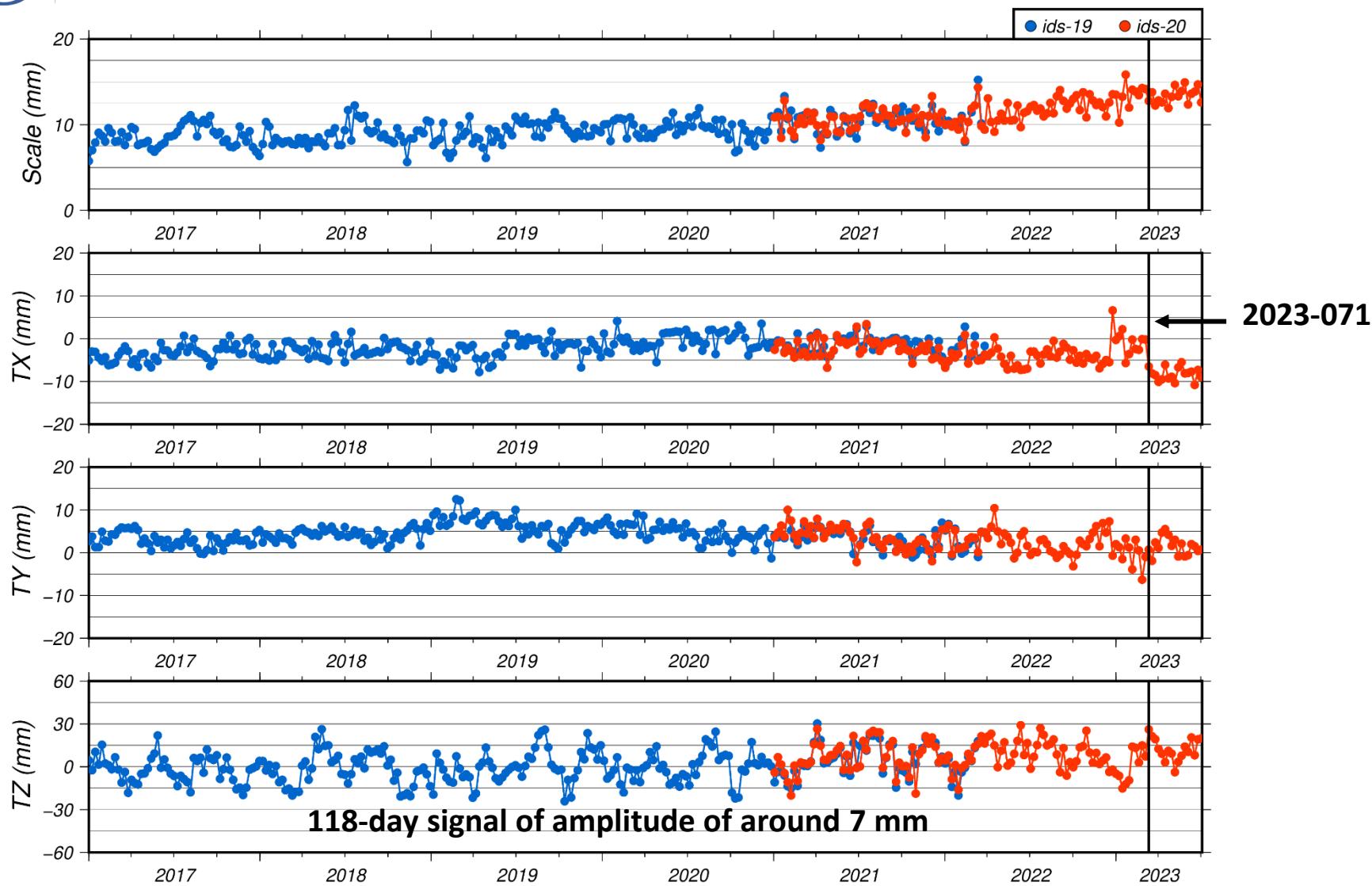
GSC 53





Helmert parameters wrt DPOD2020 v1.3

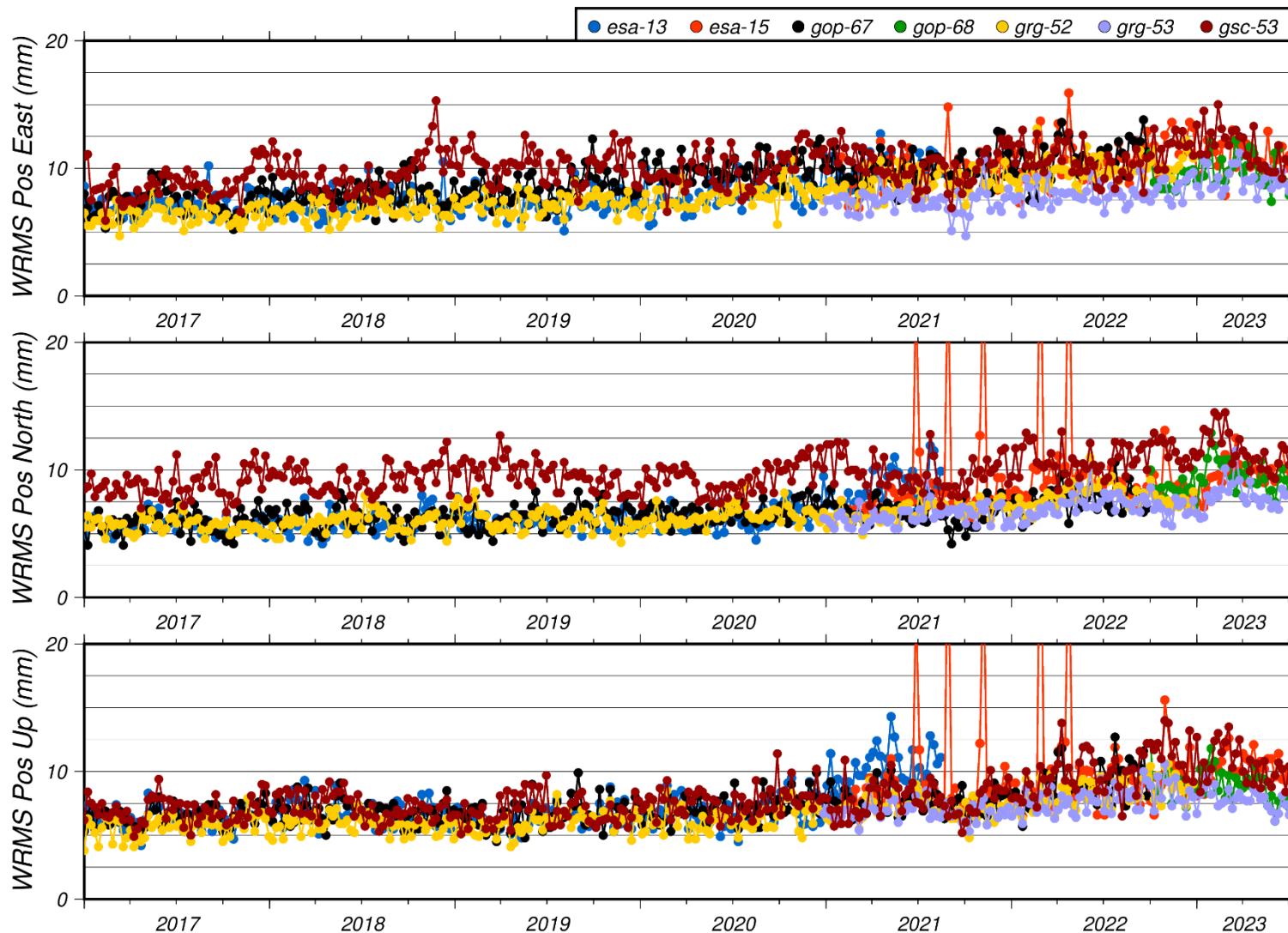
IDS 19-20



Helmert Parameters – Main observations

- Same observations with ITRF2020.
- Scale:
Increase due to the adding of HY-2C and/or Sentinel-6A.
If so, may these satellites contribute to the combined scale?
- Tx:
Discontinuity around 2023:071 for ESA, GRG and GSC.
No impact on GOP solution.
None of the DORIS events around 2023/03/12 may explain such discontinuity.
So may depend on the satellite weighting and due to a few satellites?

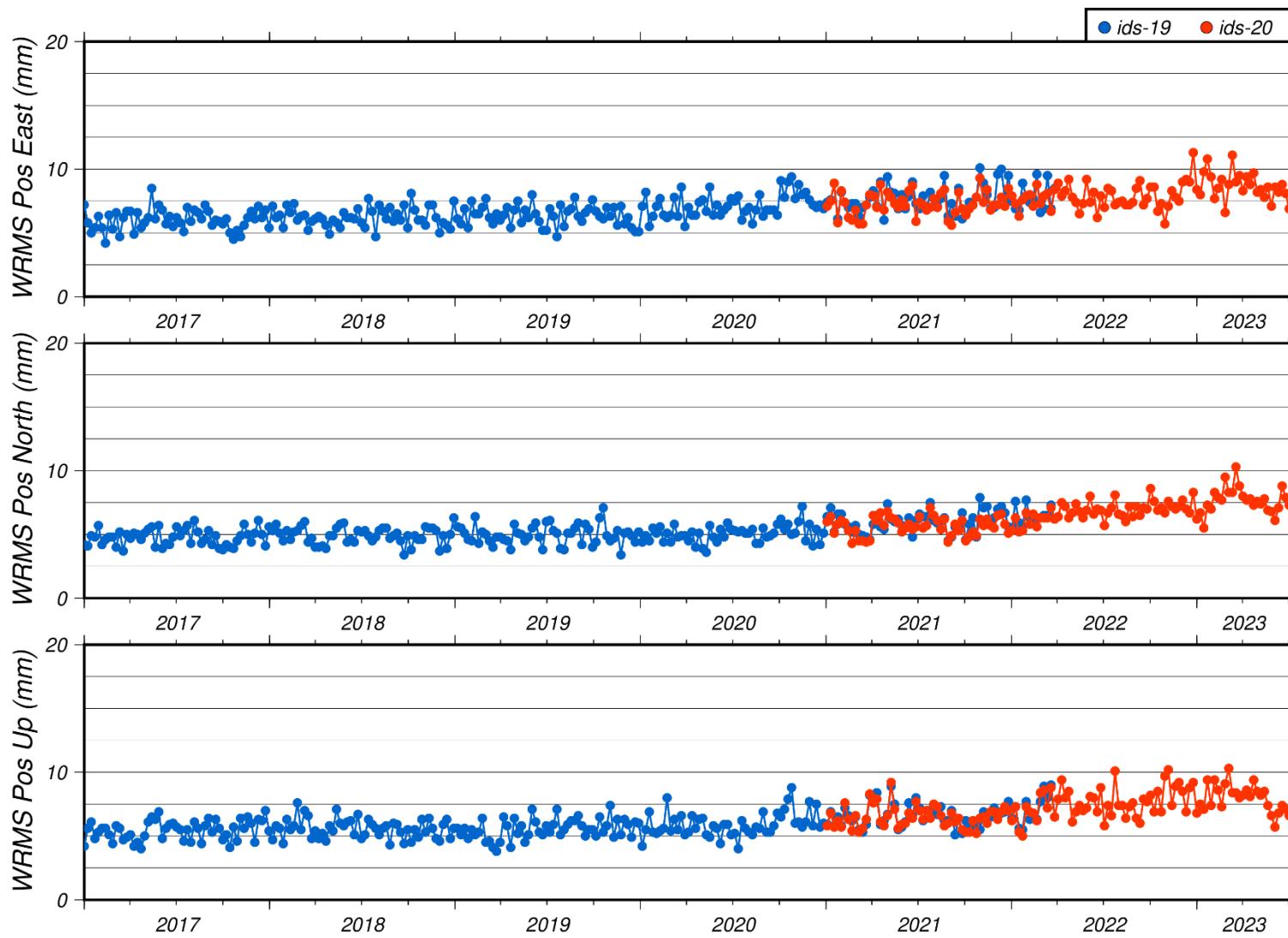
Station Position Residuals wrt DPOD2020 v1.3





Station Position Residuals wrt DPOD2020 v1.3

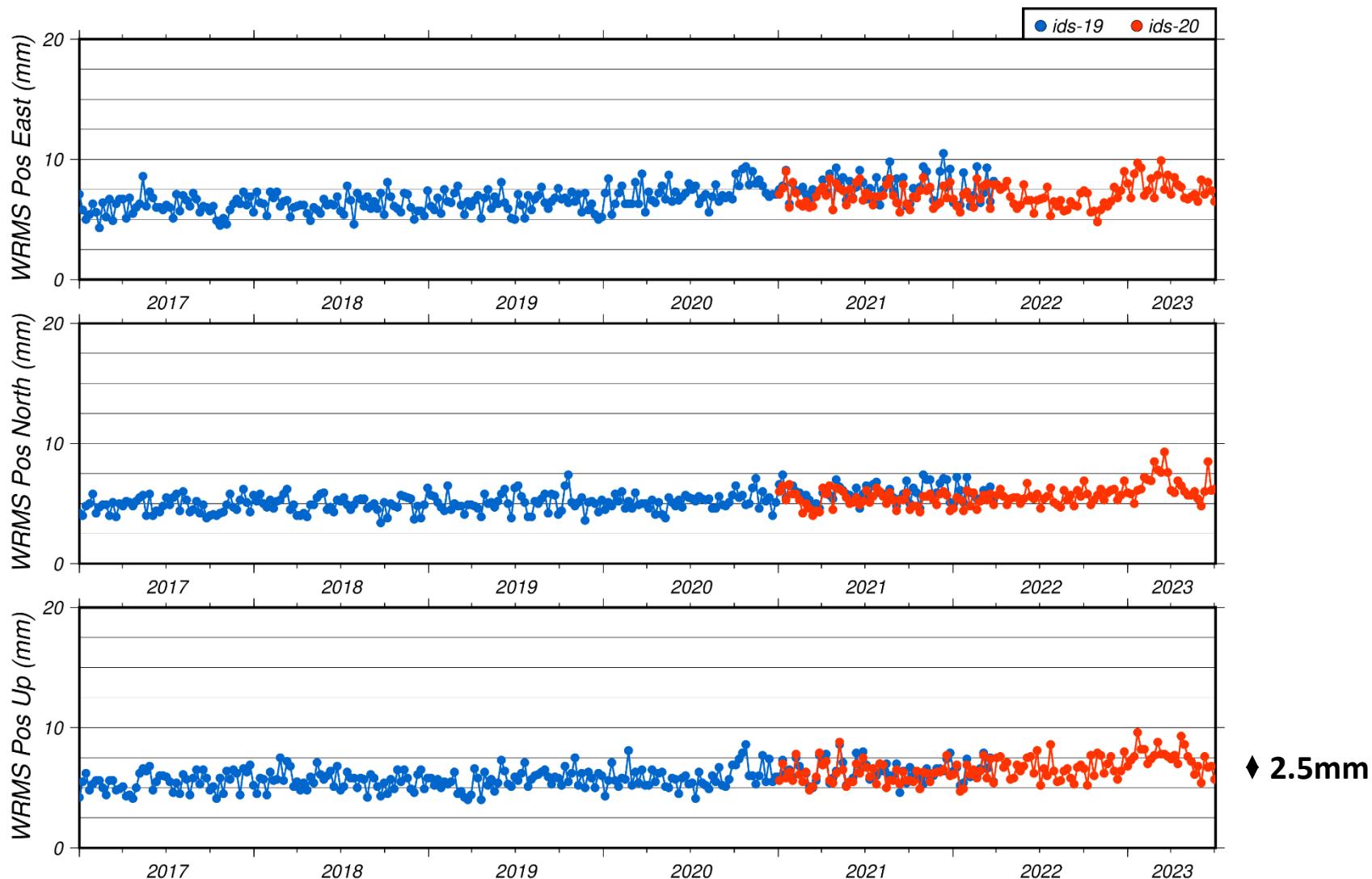
Stacking of ids 19 from 1993.0 to 2022.0.



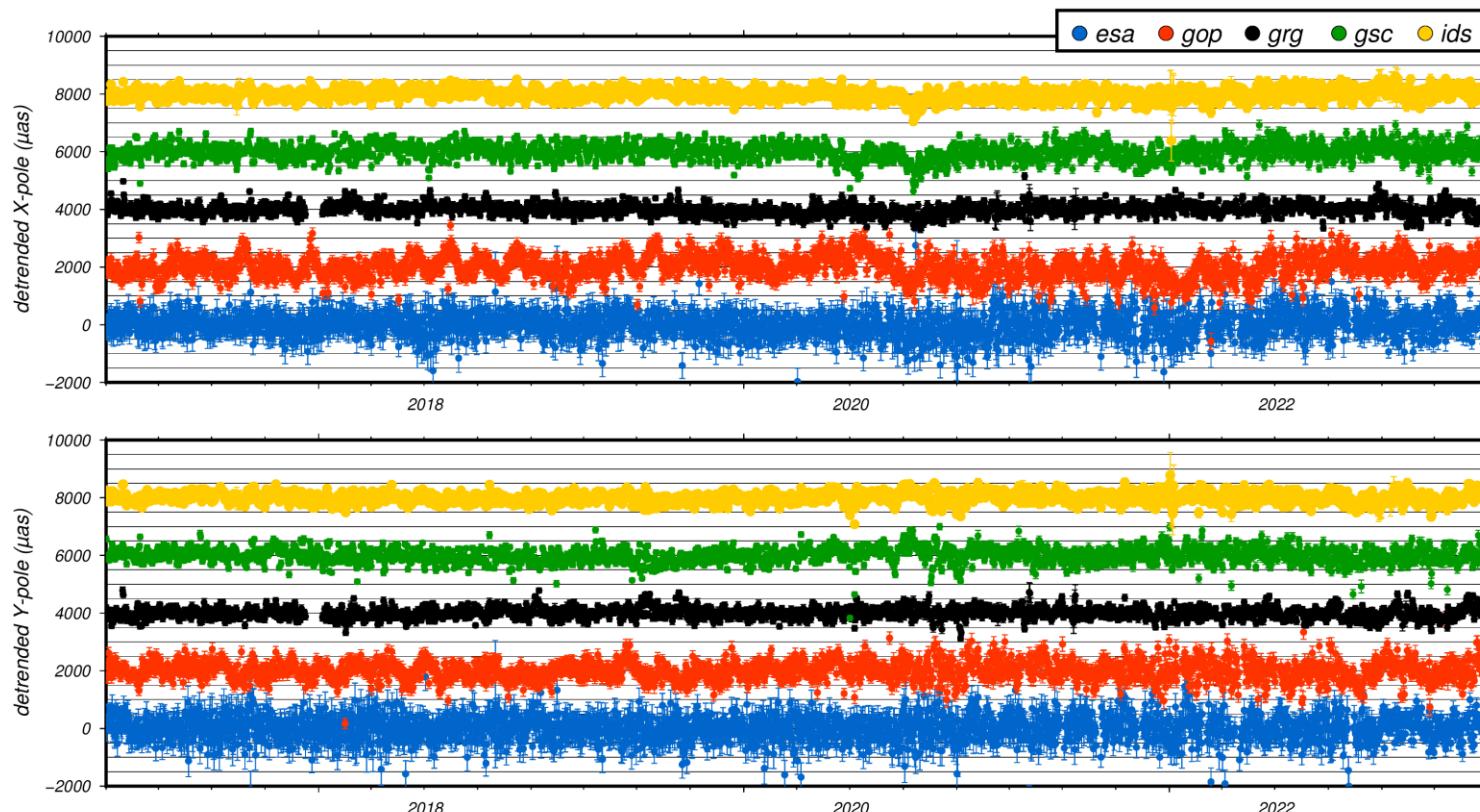


Station Position Residuals wrt DPOD2020 v2.beta

Stacking of ids 19-20 from 1993.0 to 2023.0.

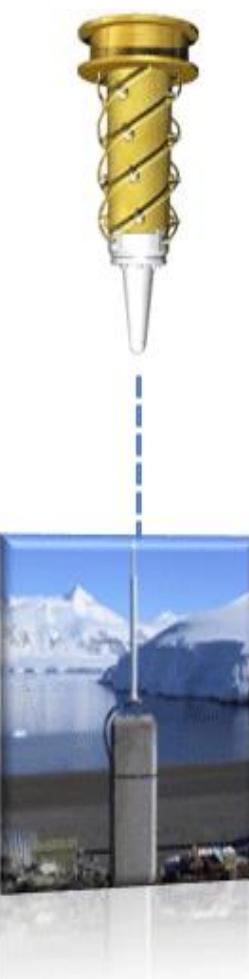


Earth Rotation Parameter differences wrt IERS C04



AC	serie	# days	X pole (μas)			Y pole (μas)		
			trend	mean	std	trend	mean	std
esa	15	2323	20.606	-2.372	407.658	14.280	-5.040	432.532
gop	68	2348	-61.688	1998.550	388.030	40.930	2000.510	323.127
grg	53	2341	0.560	4001.170	195.743	15.820	4001.710	191.248
gsc	53	2376	-33.797	5997.590	279.928	28.060	5998.290	260.316
ids	20	2383	-31.226	7998.370	191.955	31.590	7999.460	175.302

Open Issues

- 
- Adding of HY-2C and HY-2D by ESA and GSC.
 - Adding of Sentinel-6A by GSC.
 - Test of the second order ionospheric correction.
 - SAA: use of the GNSS-DORIS link onboard of Sentinel missions.



Helmert parameters wrt DPOD2020 v1.3 GOP & GRG

