

Status Report of the IDS AAC at GFZ

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GFZ Helmholtz Centre
for Geosciences

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Content

1. Status Update
2. Orbit Comparison
3. Sentinel-6A MF Macromodel
4. Contribution to ITRF2020 Update
5. Outlook

1 Status Update

Requested documents for IDS AC application in 2023

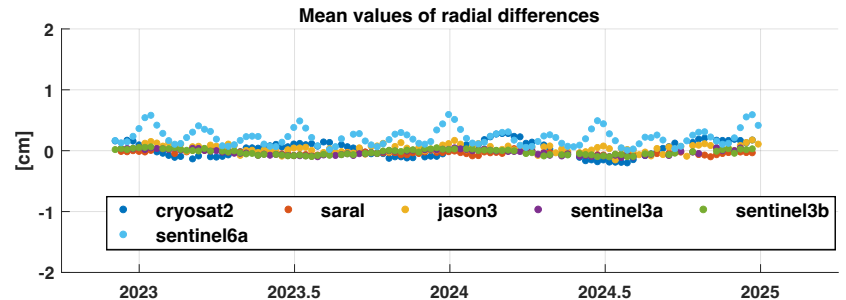
- POD description
- Orbit analysis
- Analysis of estimated parameters
 - Delivered as Technical Note in January 2025
- Single and multi-satellite sinex solutions for the last 3 years
 - Delivered as contribution to the second ITRF2020 update

2 Orbit Comparison

Orbit comparison with POE-F
(only arcs without manoeuvres)

- Overall mean RMS:
 - Radial <1 cm
 - Cross-track 1.5-2 cm
 - Along-track 2-3 cm
- Improvements for Jason-3 and Sentinel-6A (MF) under further investigation

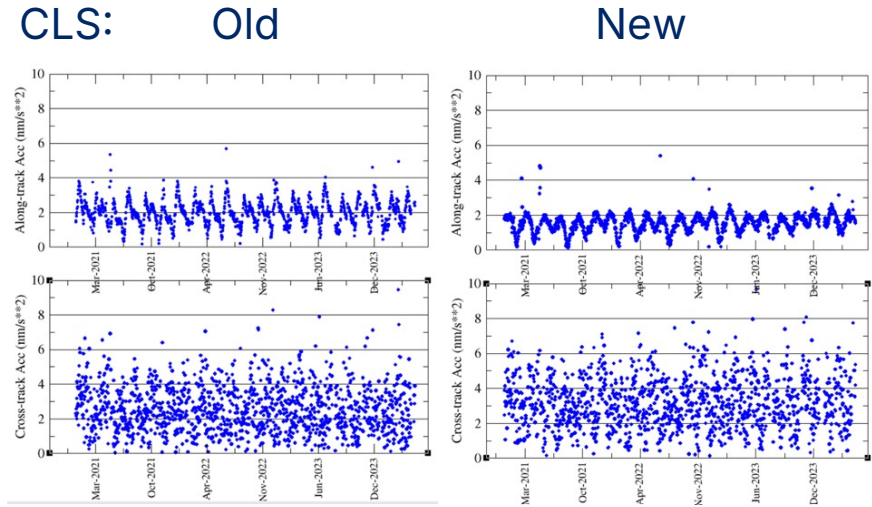
Radial [cm]		
	Mean	RMS
CryoSat-2	0.05	0.91
Jason-3	0.09	0.97
Saral	-0.01	0.67
Sentinel-3A	-0.02	0.74
Sentinel-3B	-0.02	0.79
Sentinel-6A (MF)	0.23	0.77



3 Sentinel-6A MF Macromodel (1)

Conrad macromodel

- CLS reported improvement in
 - estimated emp. accelerations
 - estimated geocentre
- Scale bias compared to a priori of ~15 mm and drift



E-Mail from Hugues Capdeville

3 Sentinel-6A MF Macromodel (2)

- Increase in scatter and amplitude of along-track accelerations
- Cross-track accelerations are comparable

GFZ model

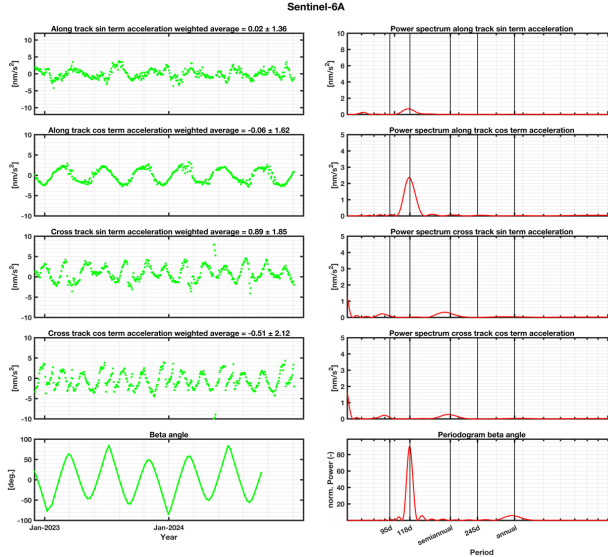
Mean \pm std.

0.02 ± 1.36

-0.06 ± 1.62

0.89 ± 1.85

-0.51 ± 2.12



Conrad model

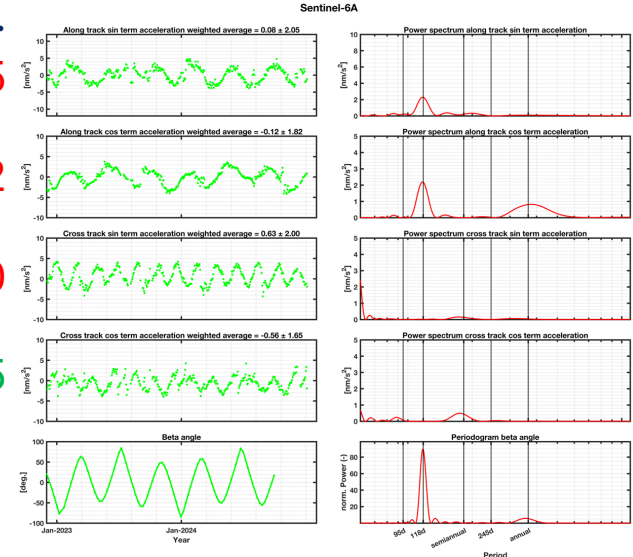
Mean \pm std.

0.08 ± 2.05

-0.12 ± 1.82

0.63 ± 2.00

-0.56 ± 1.65



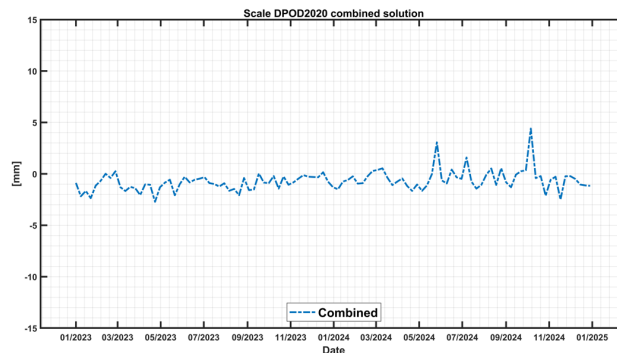
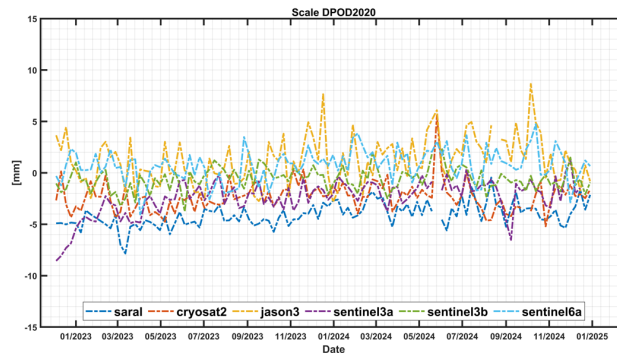
4 Contribution to ITRF 2020 Update

Delivered single-satellite and combined solution

Combined solution:

- Scatter of ERPs compared to EOP20C04 at the level of 5 mm
- Scale difference to a priori (DPOD2020 v3.1) -0.70 ± 0.96 mm

ERPs compared to EOP20C04 [mas]		
	Mean	Std.
Δ LOD	0.000	0.150
Δ X-pole	0.126	0.154
Δ Y-pole	-0.081	0.148



5 Outlook

- Working on clarifications with IDS CC on delivered SINEX solutions
- Working on further improvements for Jason-3 and Sentinel-6A MF
- Implemented SWOT quaternions, test ongoing
- Processing of SPOT and HY-2A/C/D satellites planned