GOP AC Report

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Recent GOP Activities

- Routine processing (processed data until October 2018)
- RINEX data processing
- Sentinel-3A, Sentinel-3B and Jason-3 introduction into the processing
- Understanding of data downweighting effect (ongoing)
- Implementation of linear modeling of frequency drift per pass (ongoing)

POD, Doppler and RINEX data

Doppler

Satellite	Mean w.r.t. CNES orbit (mm)			RMS w.r.t. CNES orbit (mm)		
	Radial	Along	Out	Radial	Along	Out
Jason-2	-0.2±0.6	2.5±7.0	0.1±2.4	8.5	23.7	26.5
Cryosat	0.1±0.4	2.2±2.8	-0.1±0.7	7.4	19.4	21.3
Hy-2A	0.8±0.4	-5.6±6.6	-0.6±1.3	7.2	28.7	22.1
Saral	0.1±0.3	-1.2±2.5	0.6±0.9	6.5	19.0	24.9

RINEX

Satellite	Mean w.r.t. CNES orbit (mm)			RMS w.r.t. CNES orbit (mm)		
	Radial	Along	Out	Radial	Along	Out
Jason-2	-0.2±0.5	-0.9±7.6	0.2±2.4	9.2	26.8	26.3
Cryosat	0.1±0.4	**12.0±4.3**	-0.1±0.6	7.3	18.8	19.5
Hy-2A	0.8±0.4	-2.3±6.9	-0.7±1.4	7.1	28.7	21.7
Saral	0.1±0.3	-0.6±3.2	0.6±0.9	6.4	19.1	24.7
Jason-3	-0.7±0.8	1.0±5.2	0.0±2.3	9.7	27.8	35.3
Sen-3A	-0.2±0.4	**-15.0±3.5**	-0.9±0.6	7.5	19.6	20.5
Sen-3B	-0.2±0.4	**-11.8±4.0**	-0.5±0.7	8.4	21.0	23.9

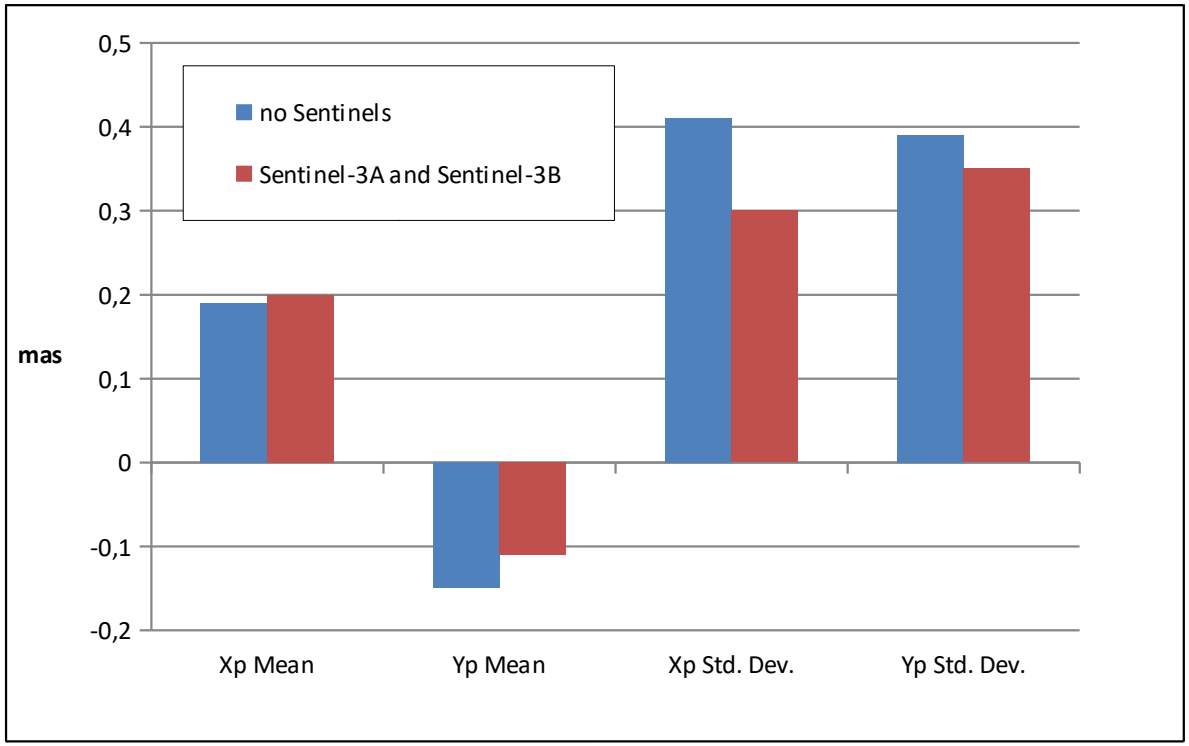
RINEX processing - Comparison of geodetic solutions

- 3rd quarter of 2018, weekly solutions
- C4 (Cryosat+Saral+Hy-2A+Jason-2)
- C4(D) - Doppler
- Doppler vs. RINEX - comparable
- Significant Impact of Sentinels
- No SAA strategy for Jason-3

Com.	RMS w.r.t. DPOD 2014 (mm)			Repeatability WRMS (mm)		
	Lat	Lon	Height	Lat	Lon	Height
C4(D)	12.0	19.7	22.4	6.6	8.9	7.7
C4	12.1	20.7	22.8	6.2	8.6	7.5
C4+J3	11.1	20.1	22.1	6.4	9.0	8.1
C4+SA	11.4	23.5	22.3	5.9	7.8	7.1
C4+SB	11.1	17.6	21.4	5.8	7.6	7.0
C4+SA+SB	11.2	20.7	21.2	5.9	7.6	7.0
C7	10.4	19.3	21.1	5.9	7.8	7.4

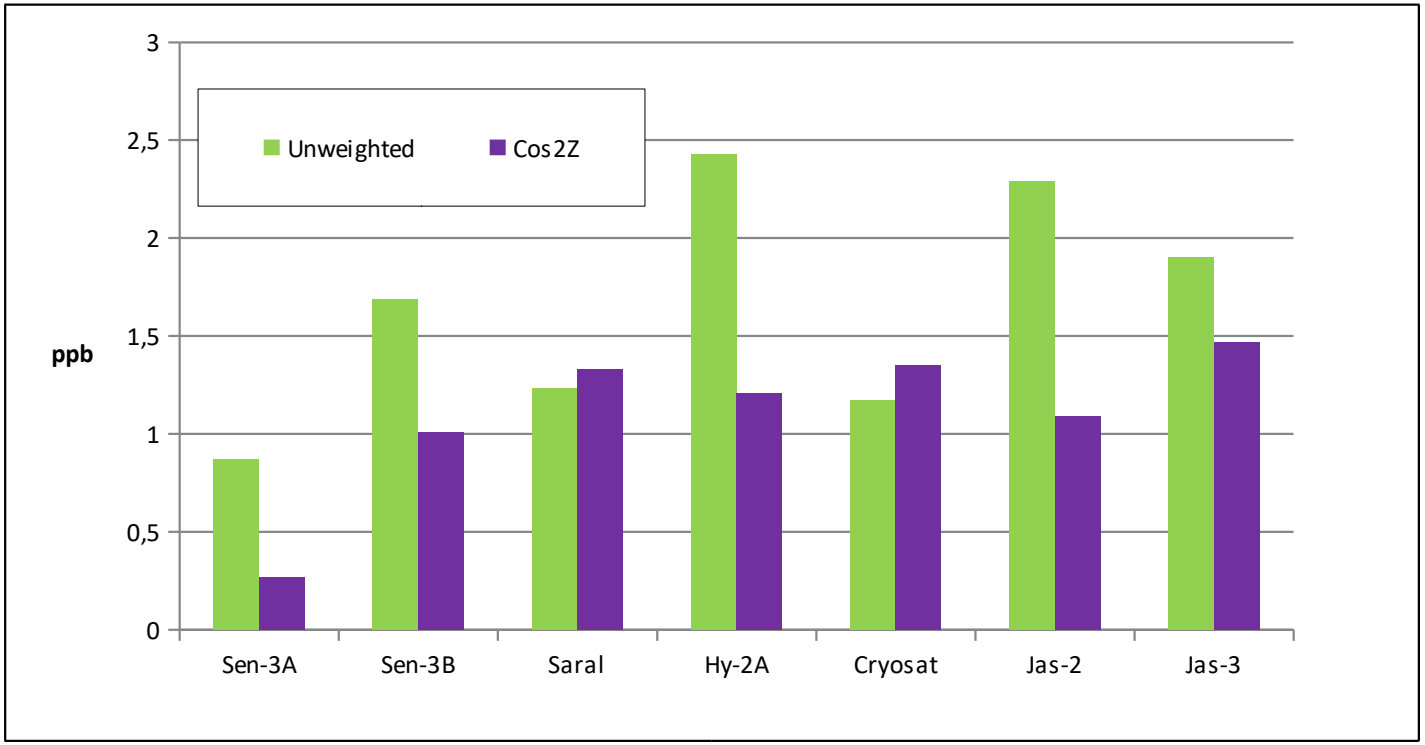
Pole estimation

- Comparison w.r.t. IERS C04 model
- Impact of Sentinel -3A,-3B data Std. dev. decreased from 0.41 to 0.30 mas (Xp) and from 0.39 to 0.35 mas (Yp)



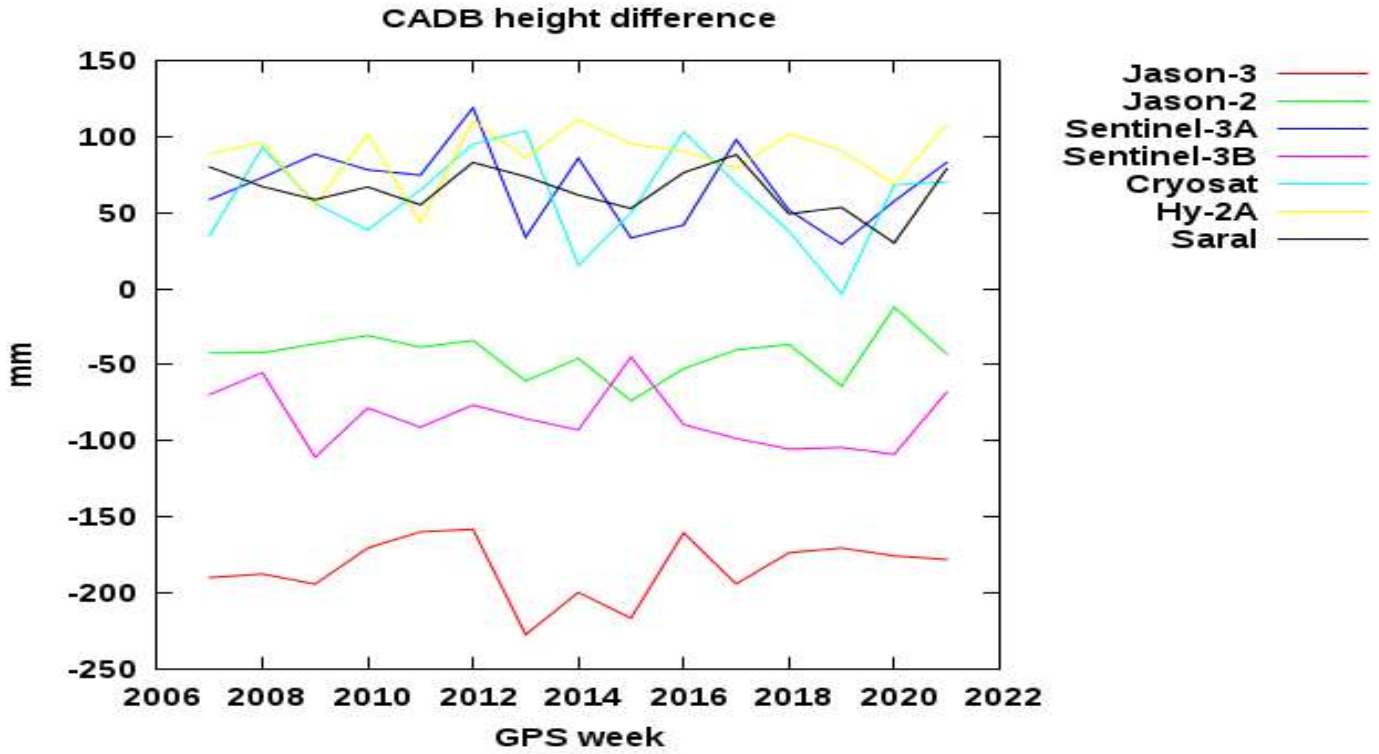
Scale

- Comparison unweighted vs. Cos^2Z
- Scale from single satellite weekly solutions (3rd quarter of 2019)
- For downweighting, scale is from 1 to 1.5 ppb except for Sentinel-3A
- Downweighting decreases the scale except for Saral and Cryosat



Sentinel-3B SAA efect?

- According to E. Jalabert and F. Mercier presentation at IDS workshop 2018, Sentinel-3B USO has similar sensitivity to SAA as for Sentinel-3A, but the opposite sign of the effect
- Height bias of Cachoeira Paulista (station with the most affected observations) for Sentinel-3B single satellite solution is similar to Jason-2 (but even higher).
- For Sentinel-3A a bias is similar to Cryosat, Hy-2A and Saral
- DPOD 2014 as the reference



Thanks for your attention ...