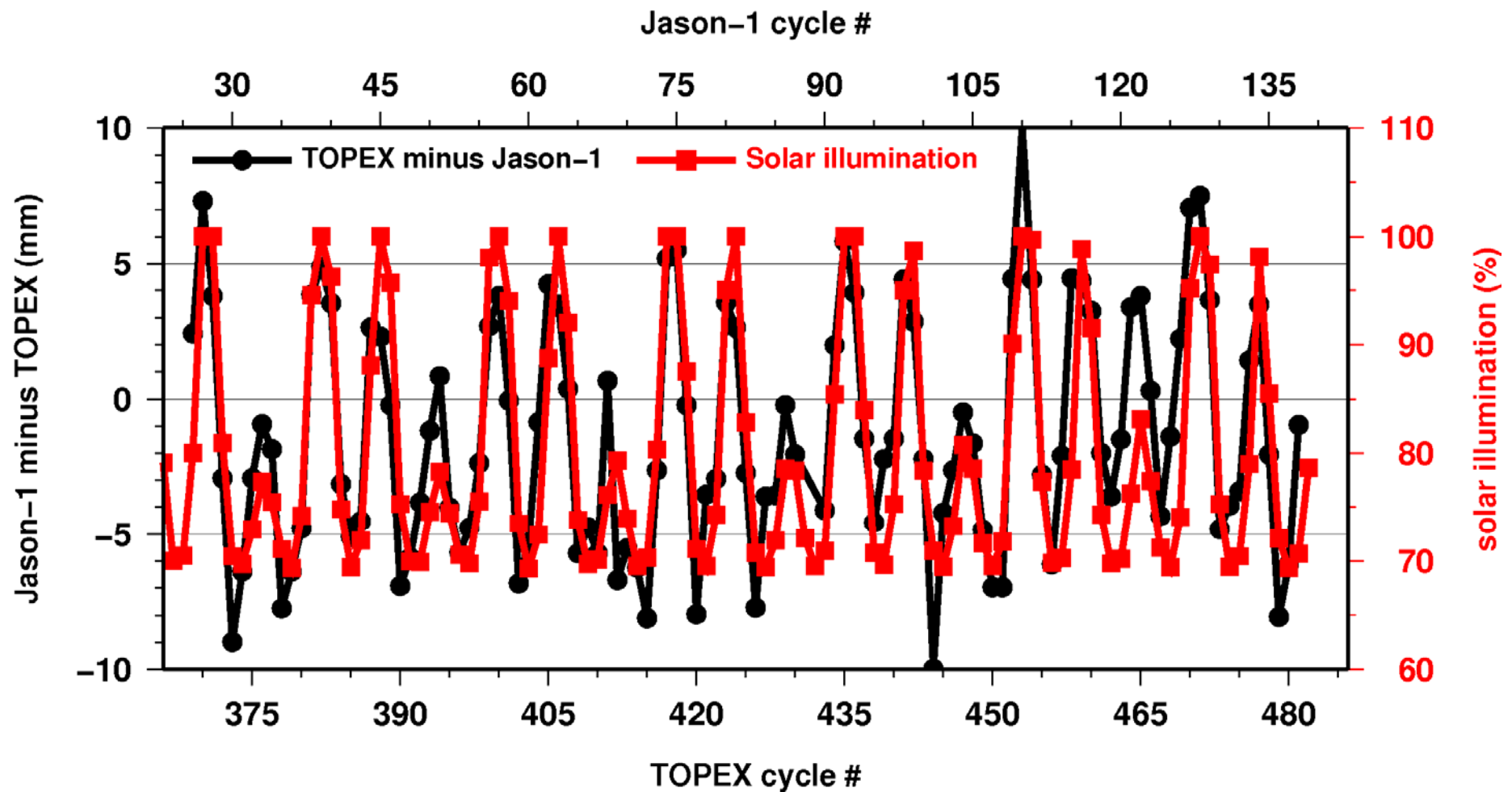


# Summary of 59-day cycle splinter

Chairs: N. Picot, R. Scharroo

For per-cycle global means, the J1-TX bias is highly corrected with the amount of time TX/J1 spent in the Sun.



# TOPEX CoG Correction

- Analysis of algorithm and SLR residuals confirms existence and sign of CoG variation of TOPEX
- No such variations exist on J1 and J2
- CoG variation seen in TOPEX attitude
- Need to analyse SA deployment error
- Need to find design of or actual SA part

# Jason-1 instrument/platform behaviour

- No significant temperature 59-day variation measured at altimeter
- Should also be evaluated along orbit
- Similar studies to be conducted for TOPEX and Jason-2
- No significant orbit error at 59-day cycle
- No CoG variation observed nor expected in Jason because of design

# Tide solutions

- Clear indication that not applying or wrongly applying CoG correction on TOPEX leaks into empirical S2 tide model
- FES2004 model should be less sensitive to this error (hydrodynamic)
- Tide model differences can explain some, but **certainly not** all of the observed 59-day cycle

# Impacts

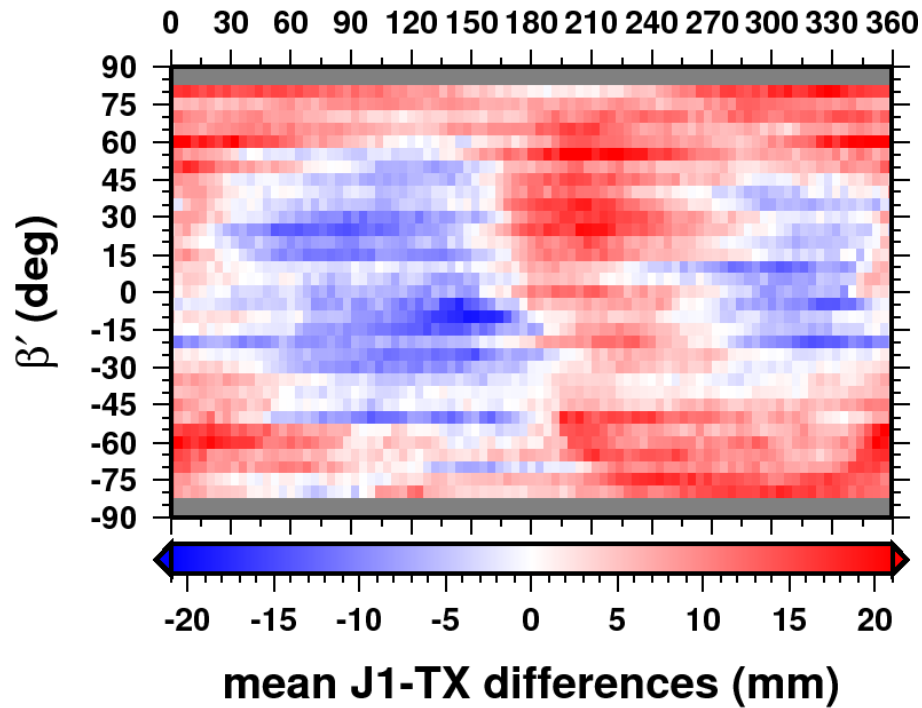
- 59-day cycle does not impact sea level trend at long time periods, but does impact the confidence level
- Not solving the causes will affect / has affected tide modelling
- More studies required to identify other impacts and possible causes

# Other suggestions

- Time tag bias (TX), sigma0 variations, off-nadir pointing (J1) might be related to the observed 59-day variations
- Difference between TOPEX A and B suggests instrumental causes
- Evaluations best conducted both on cycle averages (4 mm) **and** along-orbit (20 mm)

## Sea level

$\alpha'$  (deg)



## Orbit – range

$\alpha'$  (deg)

