

# **Possible effect of South Atlantic Anomaly on the SPOT-5 DORIS data**

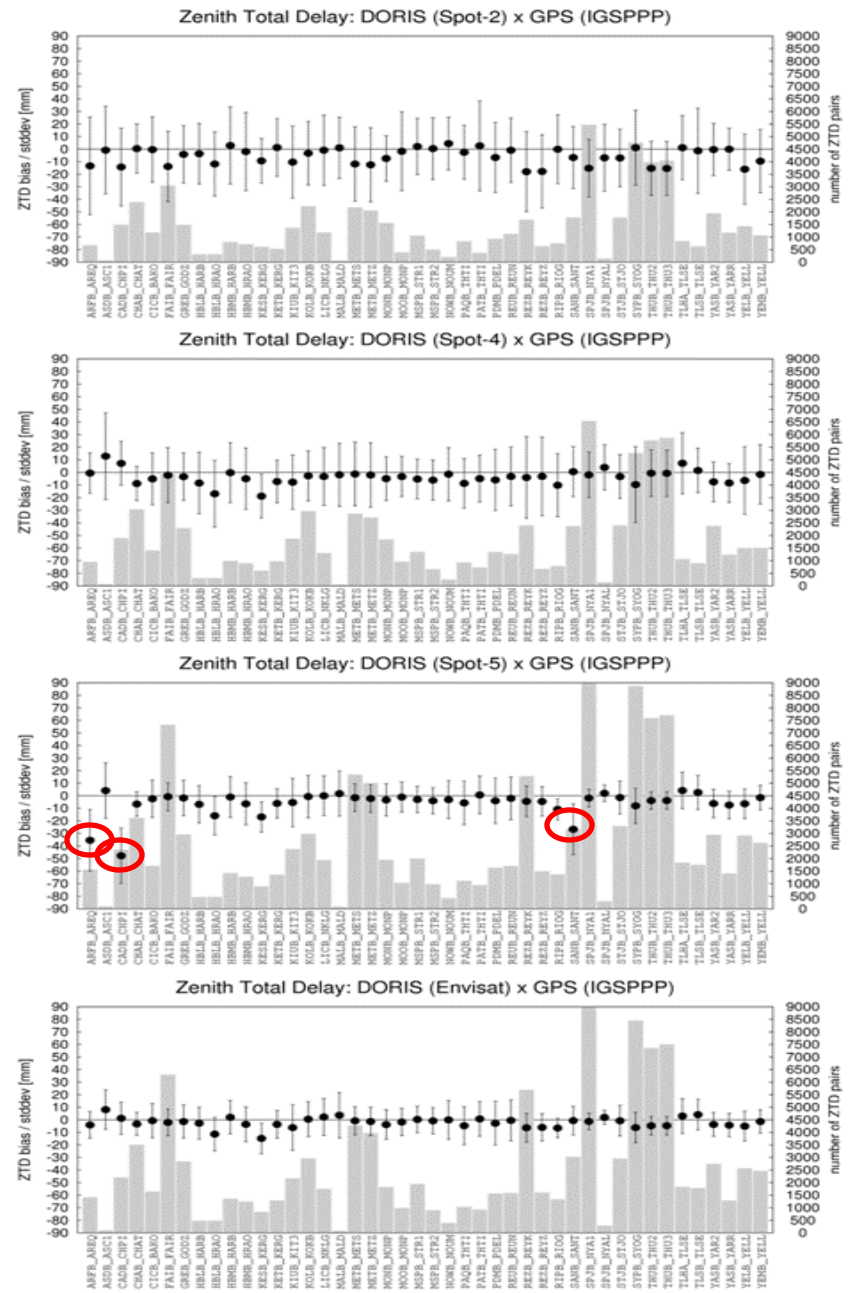
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**Geodetic Observatory Pecný**

**DORIS AWG meeting, Darmstadt 26.-27.5.2010**

## Comparison ZTD DORIS X GNSS (2006.0-2009.0)

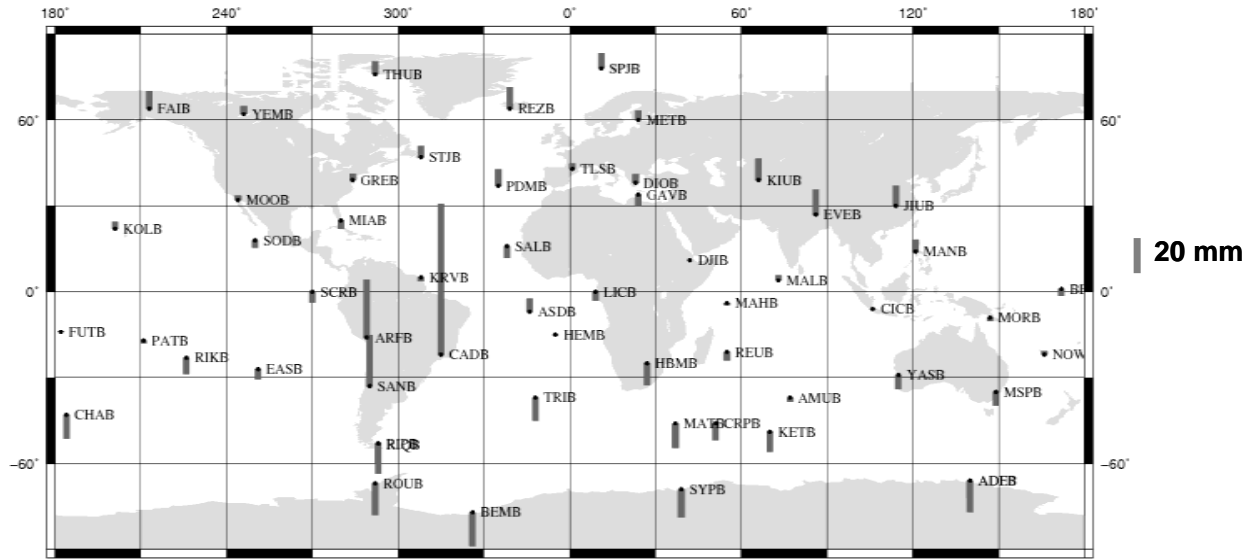
- DORIS ZTD estimated per Satellite pass
- GNSS PPP product as reference
- offset for SPOT-5 south American stations



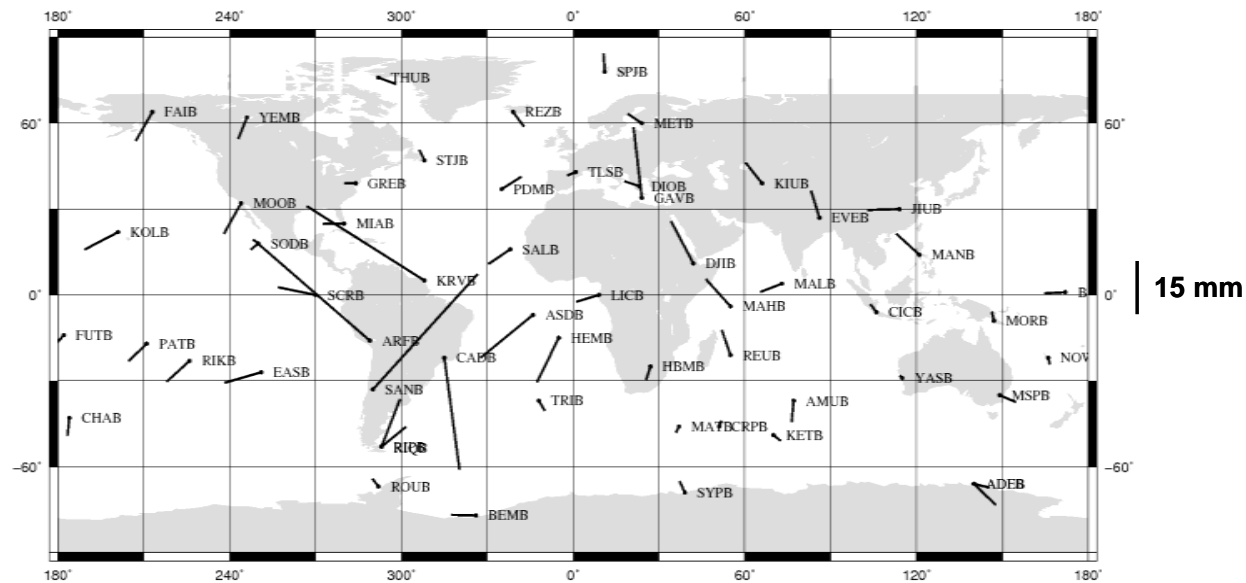
## Coordinates differences

SPOT-5 single satellite solution vs. Combination (averages from 2008)

Height

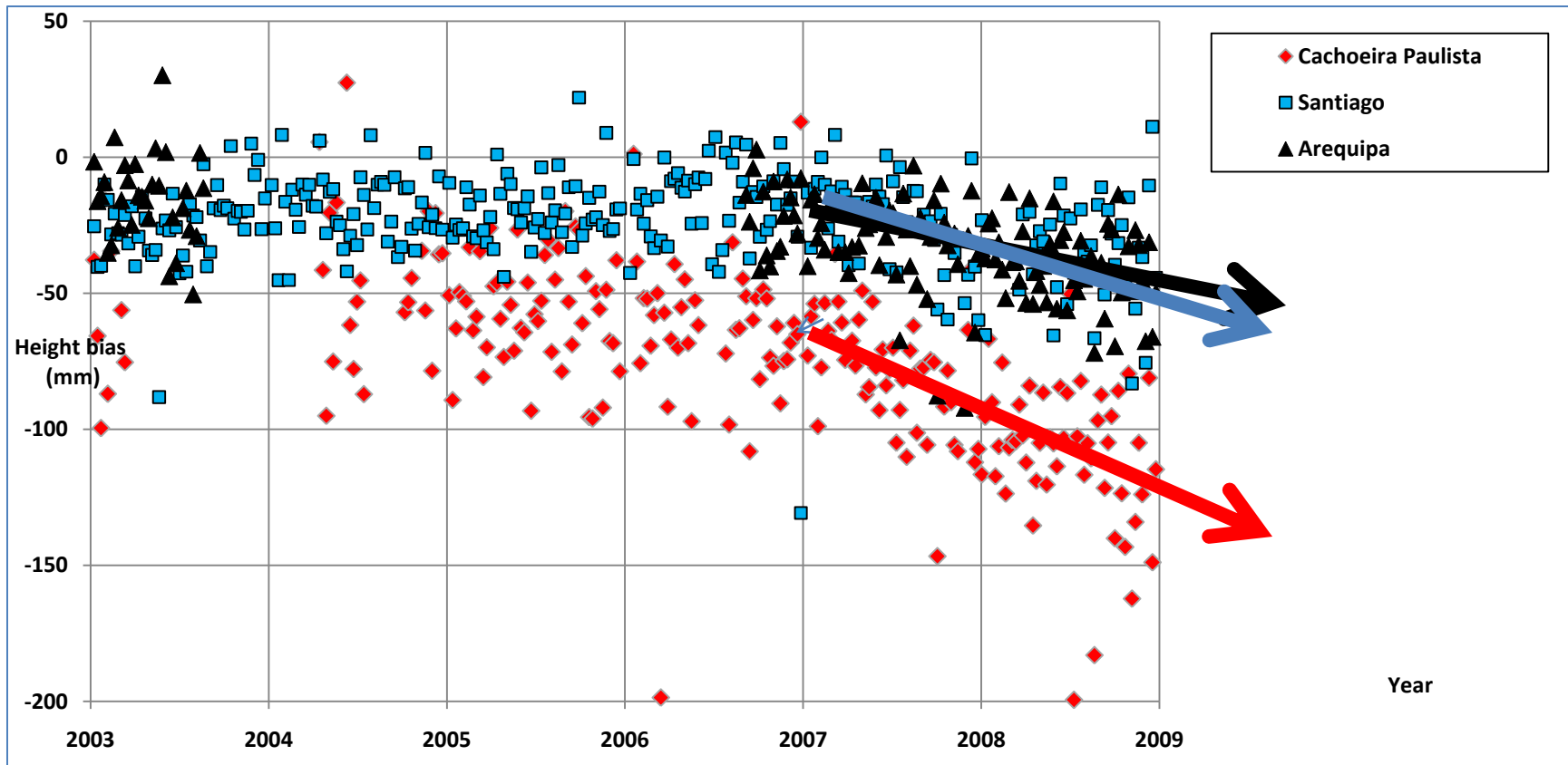


Position

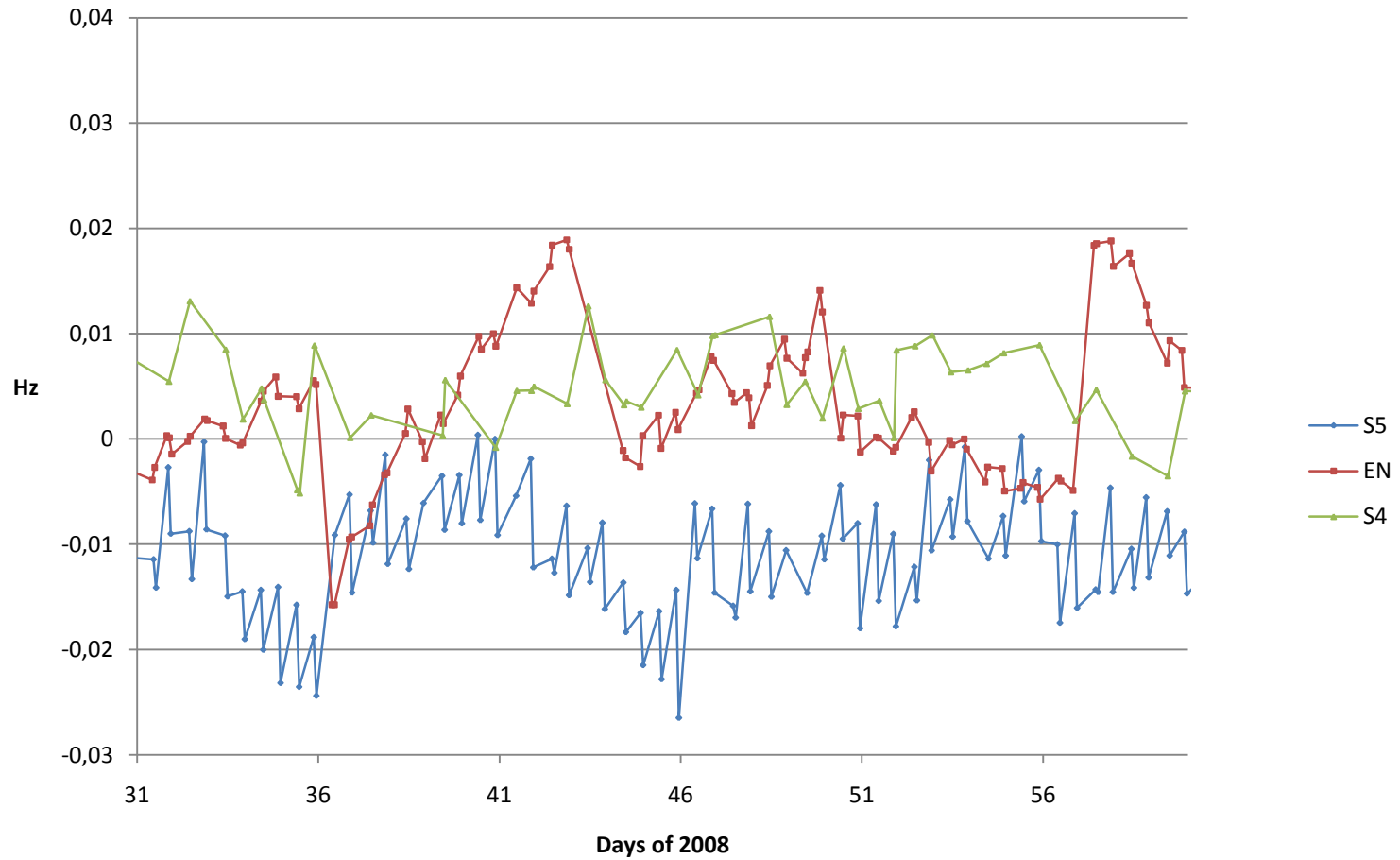


## Differences in weekly station height series SPOT-5 vs. Combination

- Aproximately from the end of 2006 increment of the offset

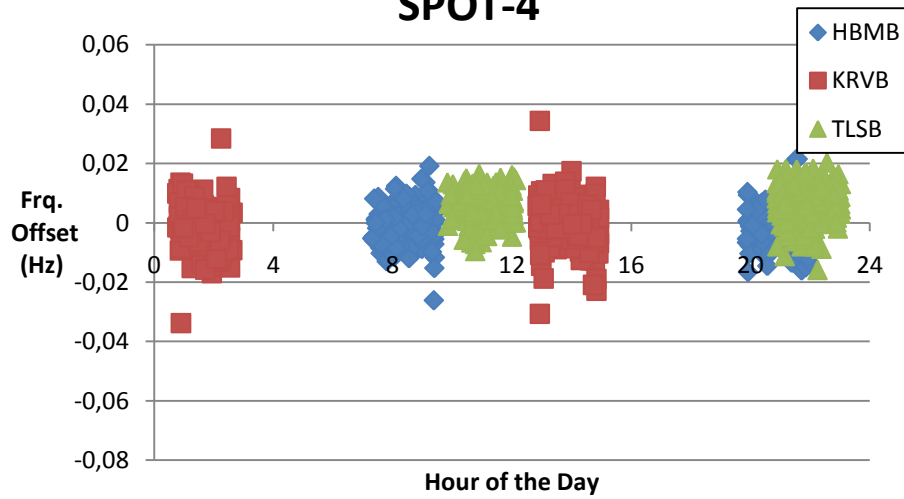


## Toulouse master beacon estimated frequency offset

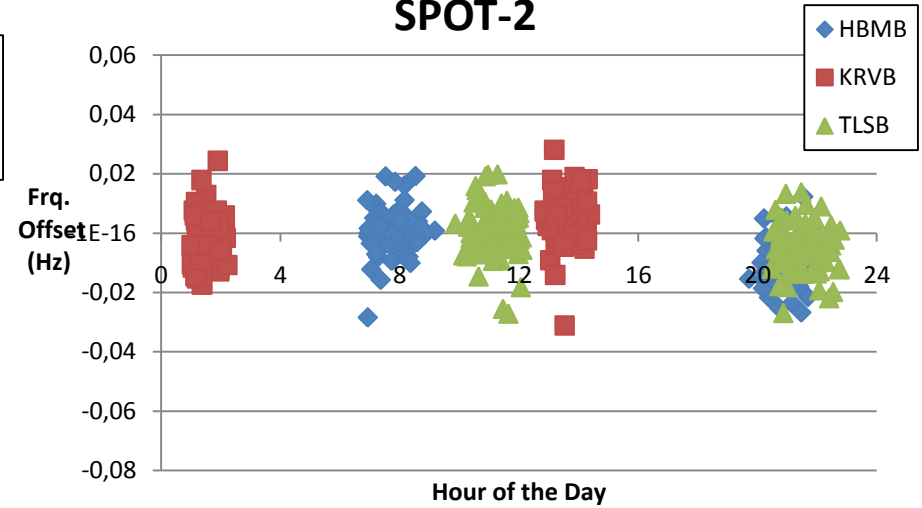


# Estimated beacon frequency offset for master beacons (values for 2009)

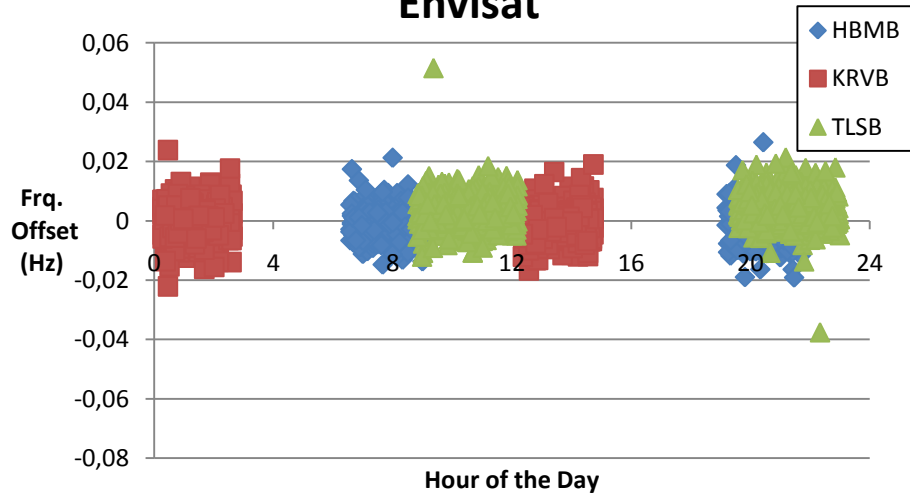
## SPOT-4



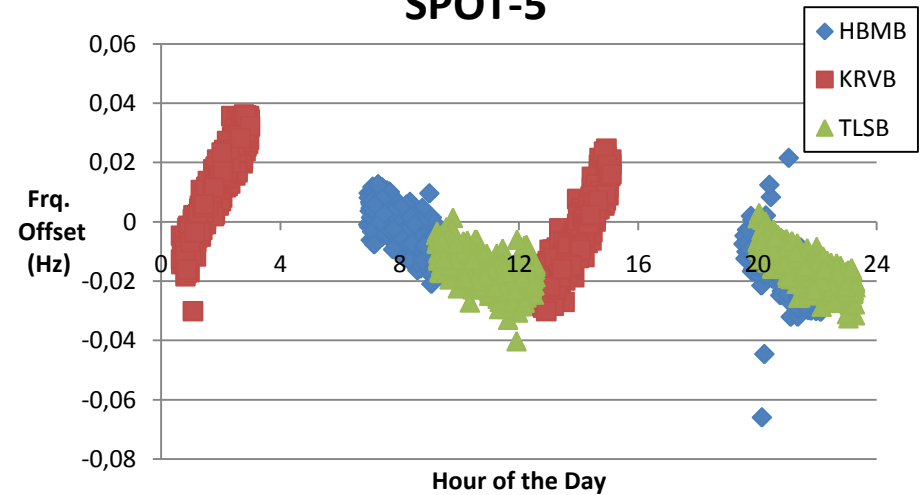
## SPOT-2



## Envisat



## SPOT-5



## Comments

- Are the presented results proving the SAA effect on the SPOT-5 data?
- SAA effects (non-DORIS) satellites with even lower altitude than SPOT-5
- SPOT-5 is equipped with the same generation of the instruments as Jason-1
- Observed effect is much smaller than for Jason-1 (aprox. one order of magnitude)
- Confirmation by other group would be profitable
- Recent IGN ZTD DORIS/GNSS comparison detected „SAA related effect“
- Why the effect was not observed before by any group?
- Did the CNES group observe the long-term drift of the SPOT-5 frequency?
- What to do now? Station selection or corrective model?