

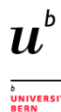
EGSIEM

Some notes

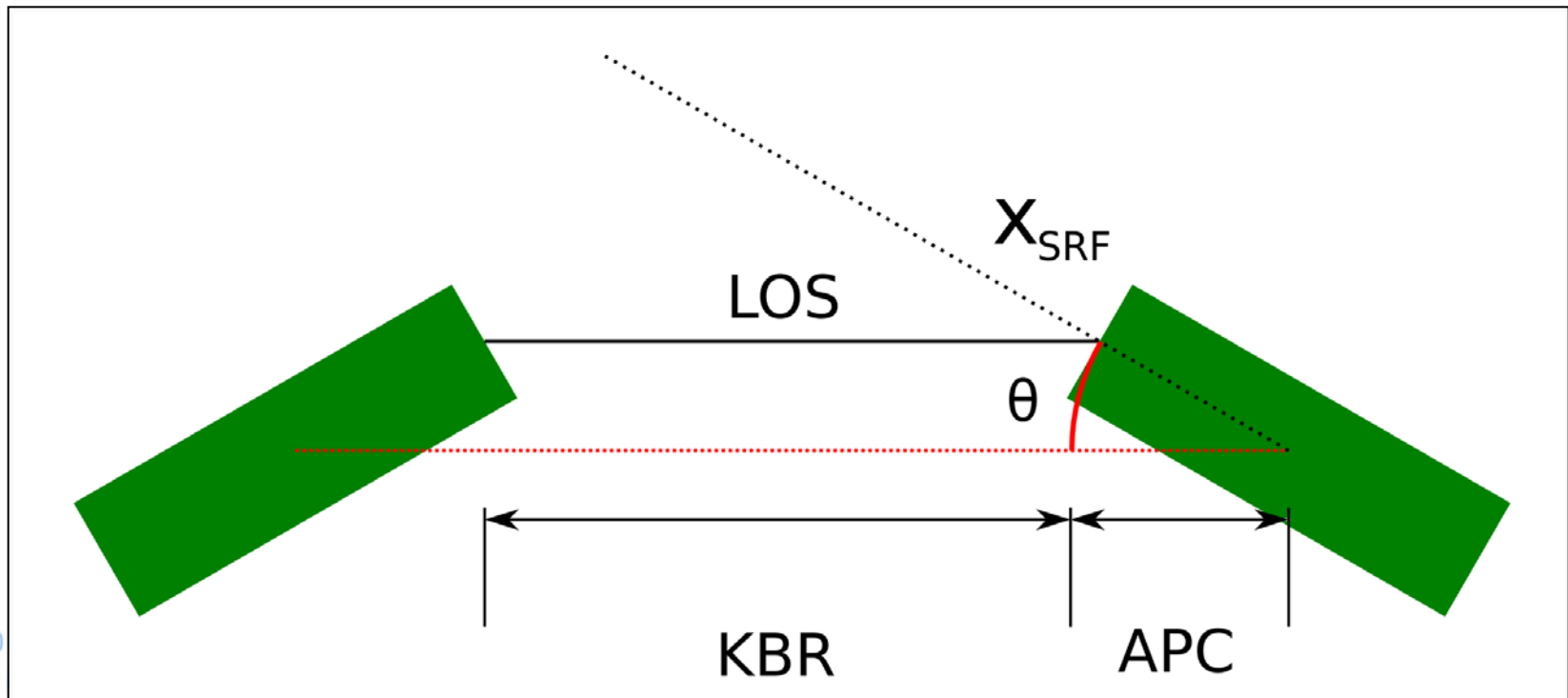
Presenter: Pavel Ditmar

Delft University of Technology, Dept. GRS

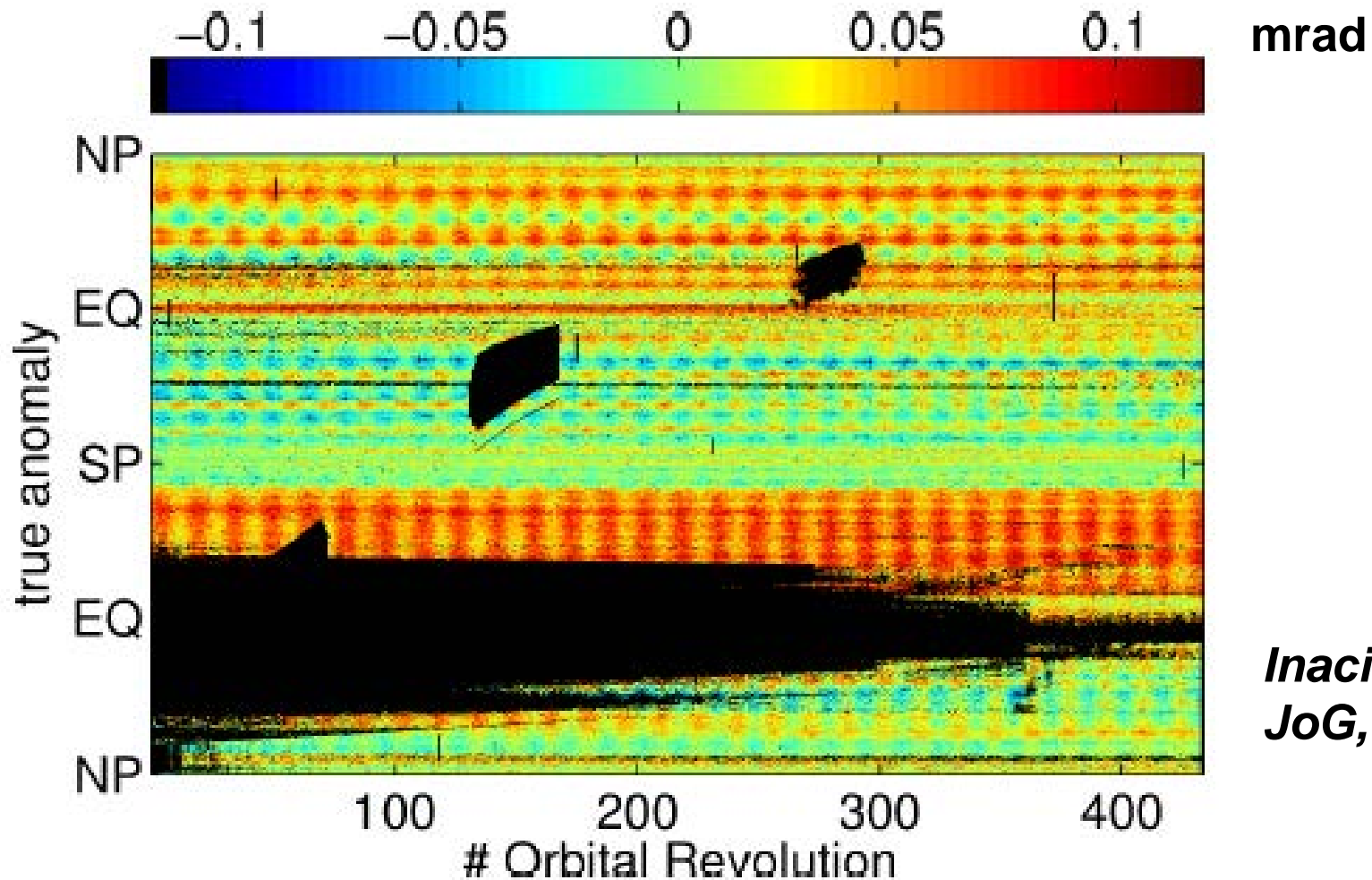
EGSIEM Kick Off Meeting
University of Bern
January 13. – 14. 2015



GRACE inter-satellite distances and the role of star cameras in their measurement



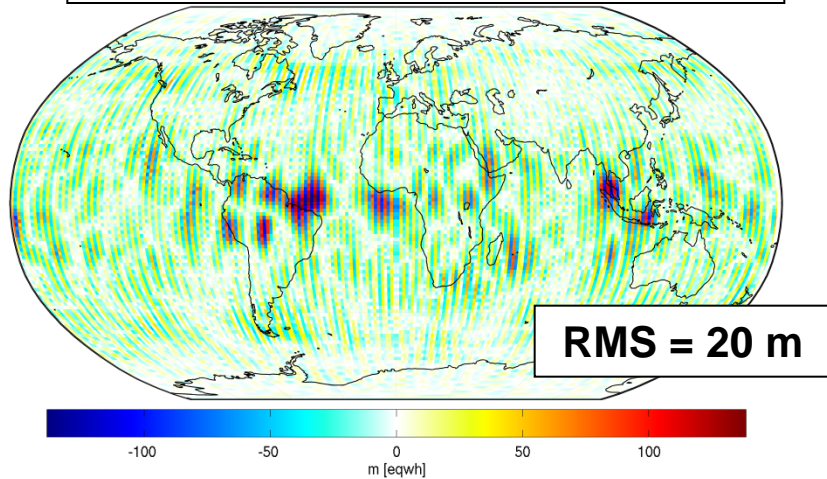
GRACE-A SC cross-boresight error (02.2006)



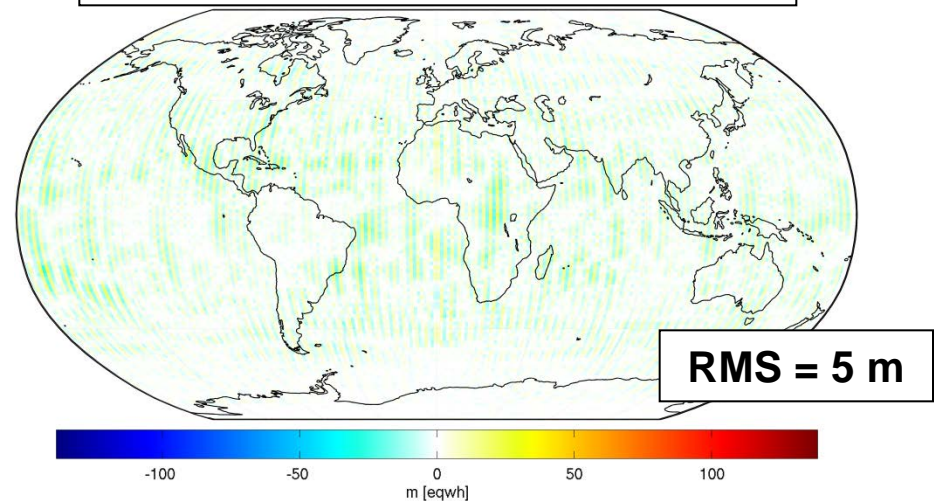
*Inacio et al,
JoG, 2015*

Impact of noise in satellite attitudes onto the quality of GRACE mass transport solutions

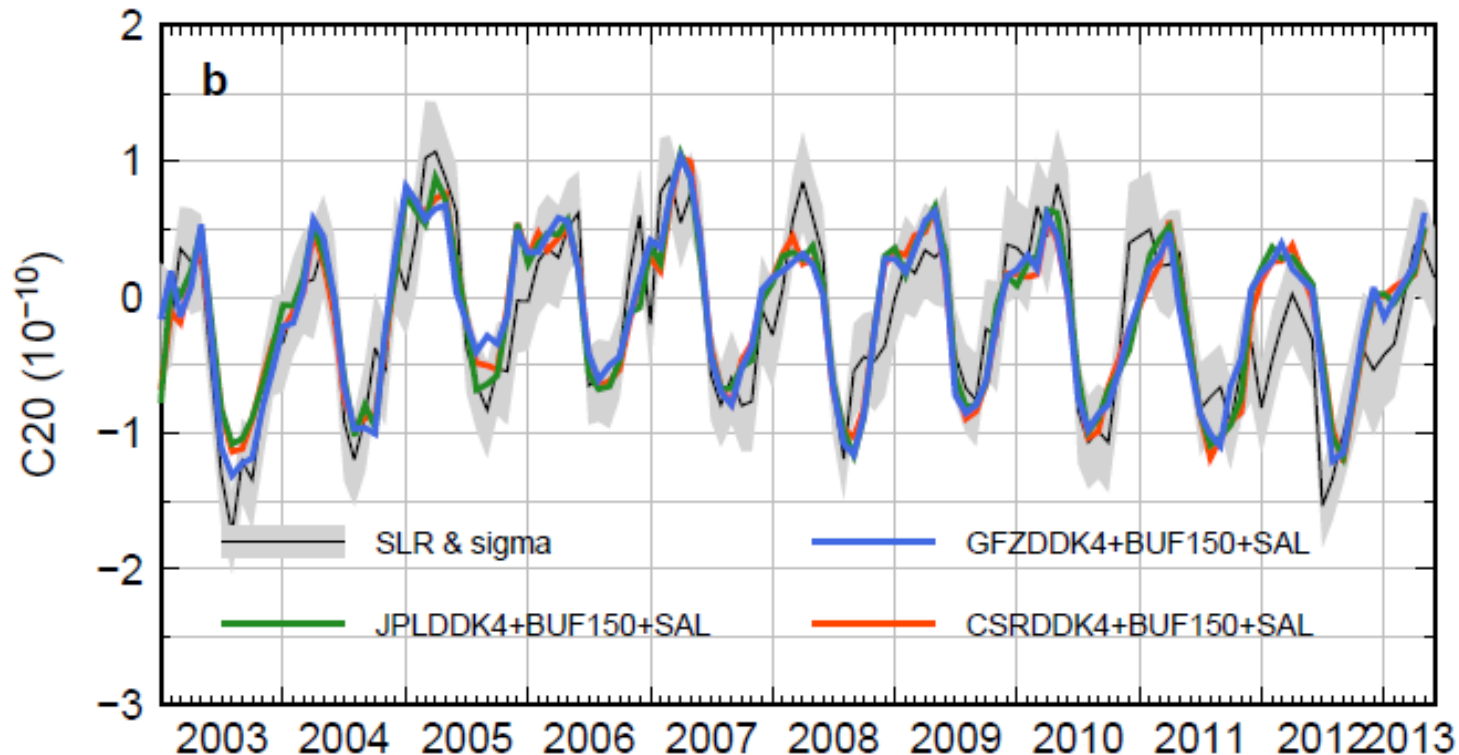
Unconstrained GRACE solution,
total noise



Unconstrained GRACE solution,
noise in satellite attitudes only



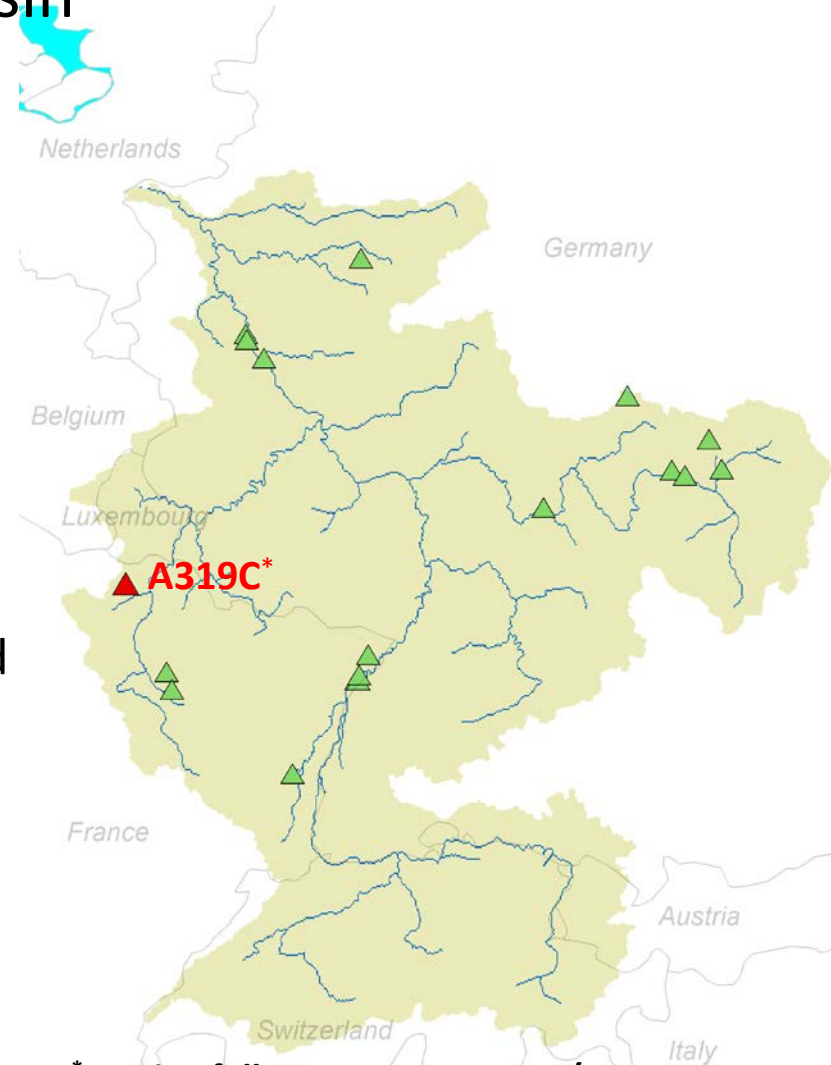
Recovery of C20 by combining GRACE and OBP data with the Swenson's approach



*Sun et al,
JoG,
submitted*

Assimilation of GRACE data into a hydrological model: case study in the Rhine River basin

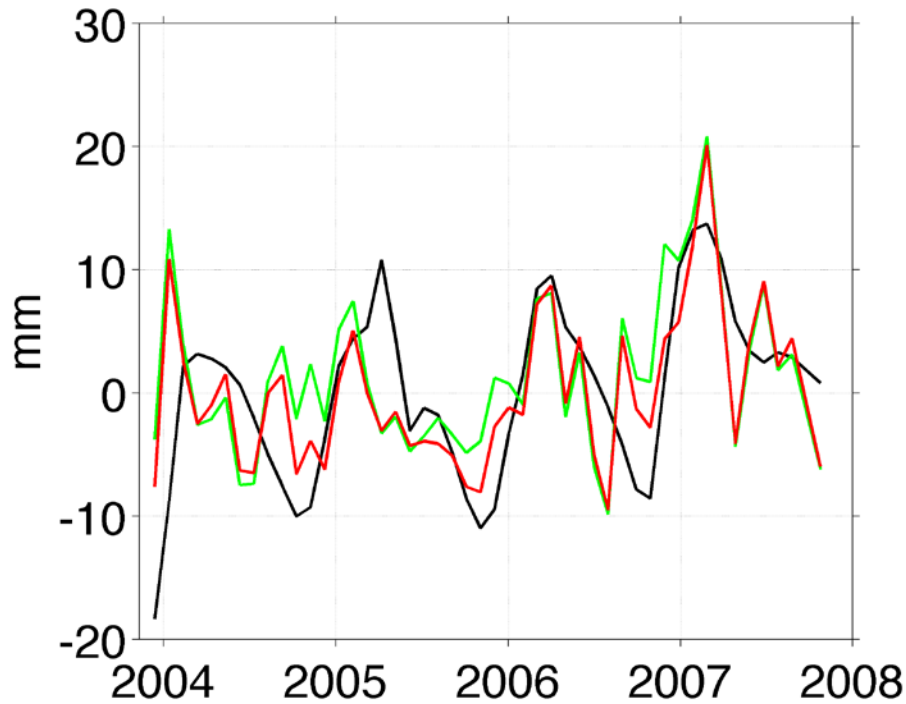
- Hydrological model: Openstreams HBV-96
- Two variants of hydrological modelling:
 - Local forcing data (E-OBS)
 - Global forcing data (Princeton global meteorological dataset)
- GRACE product: CSR-RL05 (post-processed with empirically defined filters)
- Results are validated against in-situ well measurements at 18 locations



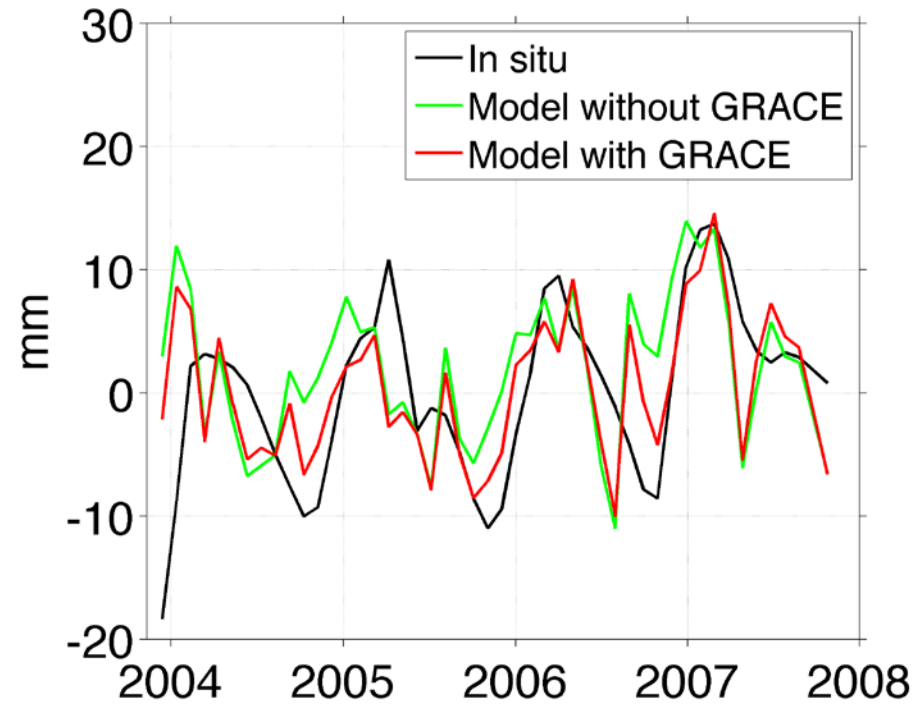
* Station full name: 02348X0009/319C

Assimilation of GRACE data into a hydrological model: groundwater time-series at A319C station

Local forcing data



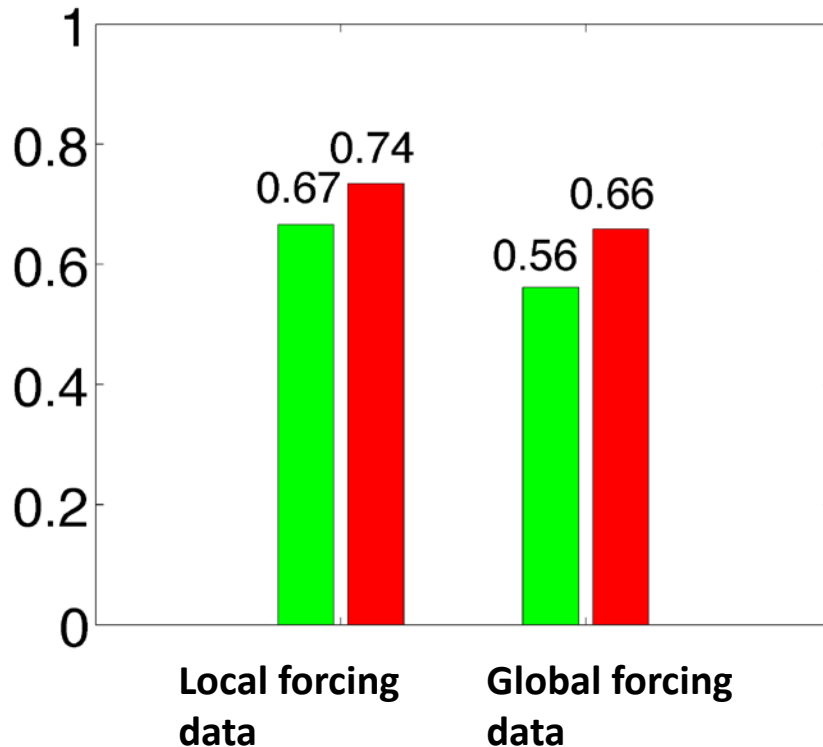
Global forcing data



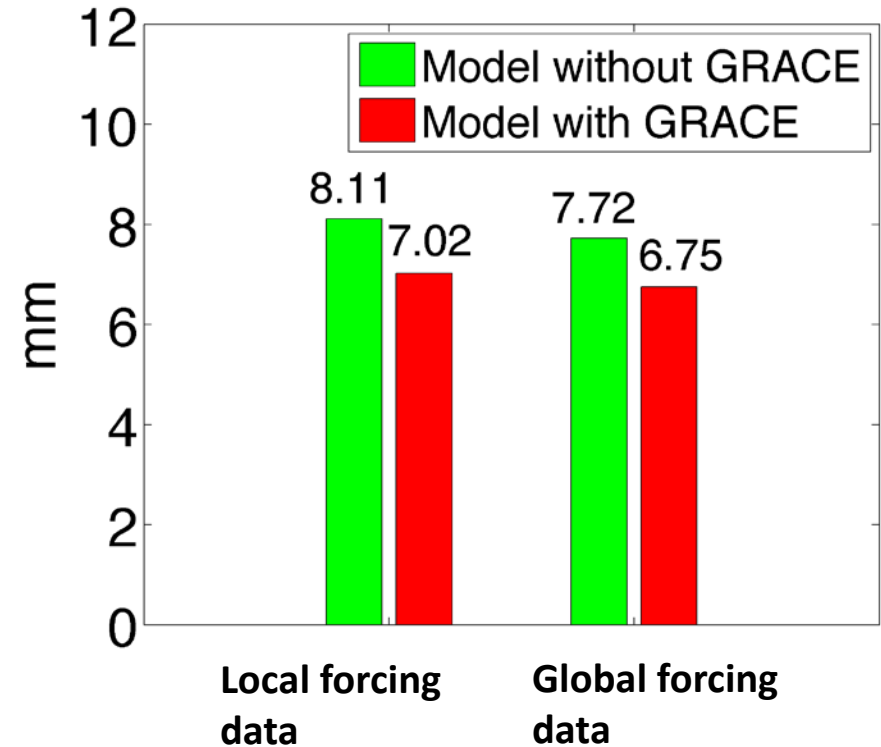
Tangdamrongsub et al, HESSD, 2014

Assimilation of GRACE data into a hydrological model: statistics over 18 locations

Average correlation coefficients



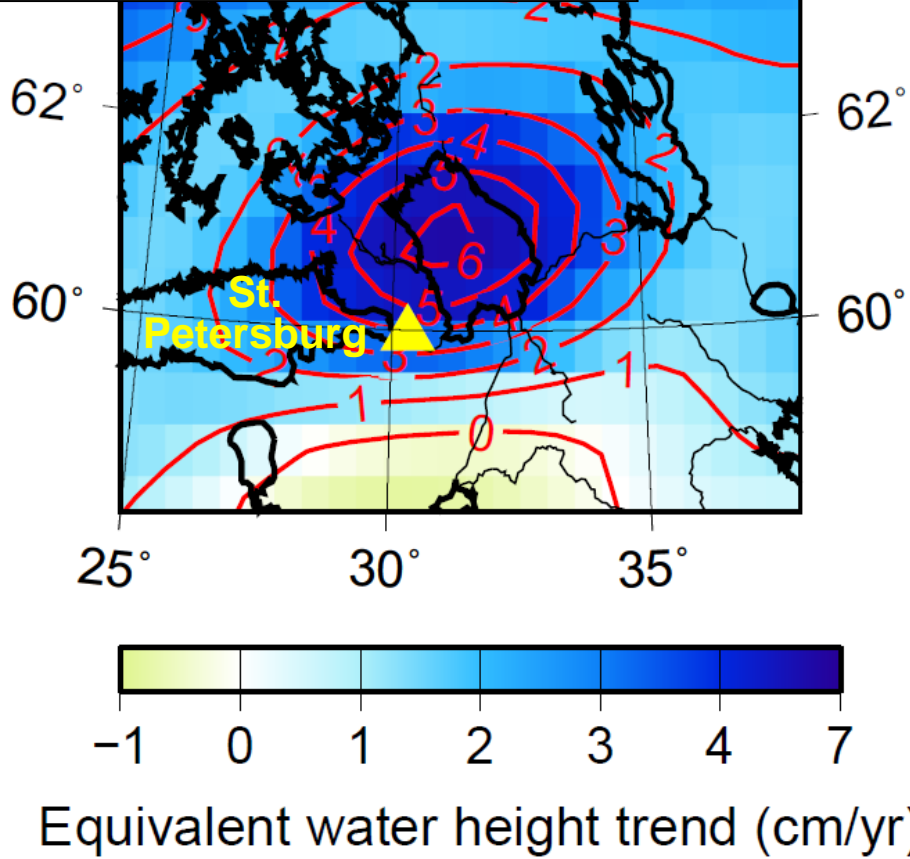
Average RMS differences



Tangdamrongsub et al, HESSD, 2014

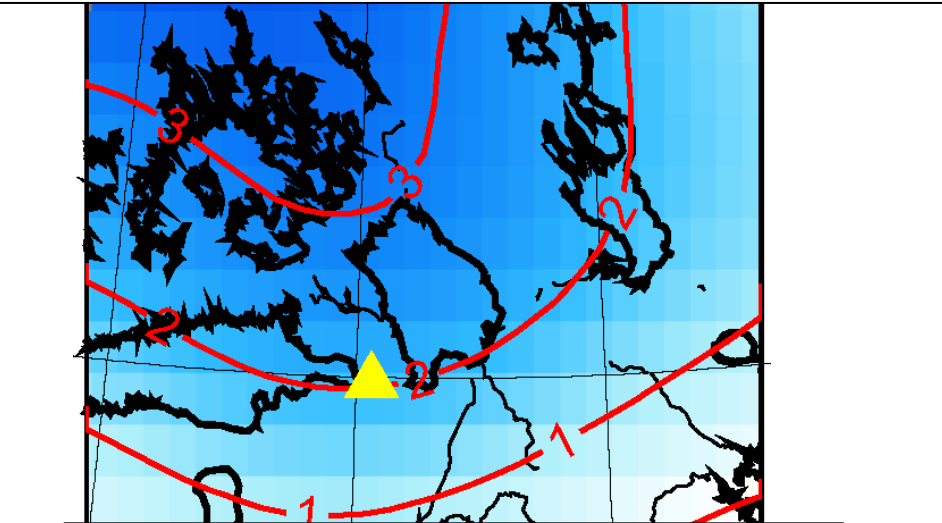
Mass trend in Lake Ladoga (2003-2008)

GRACE (Delft optimally filtered solution)

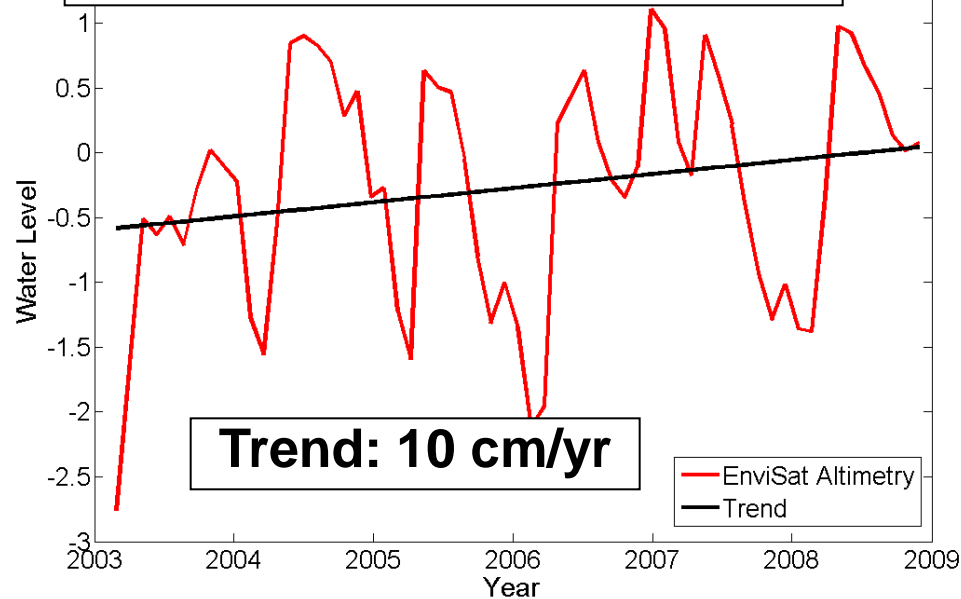


Lake area: 17,700 km²

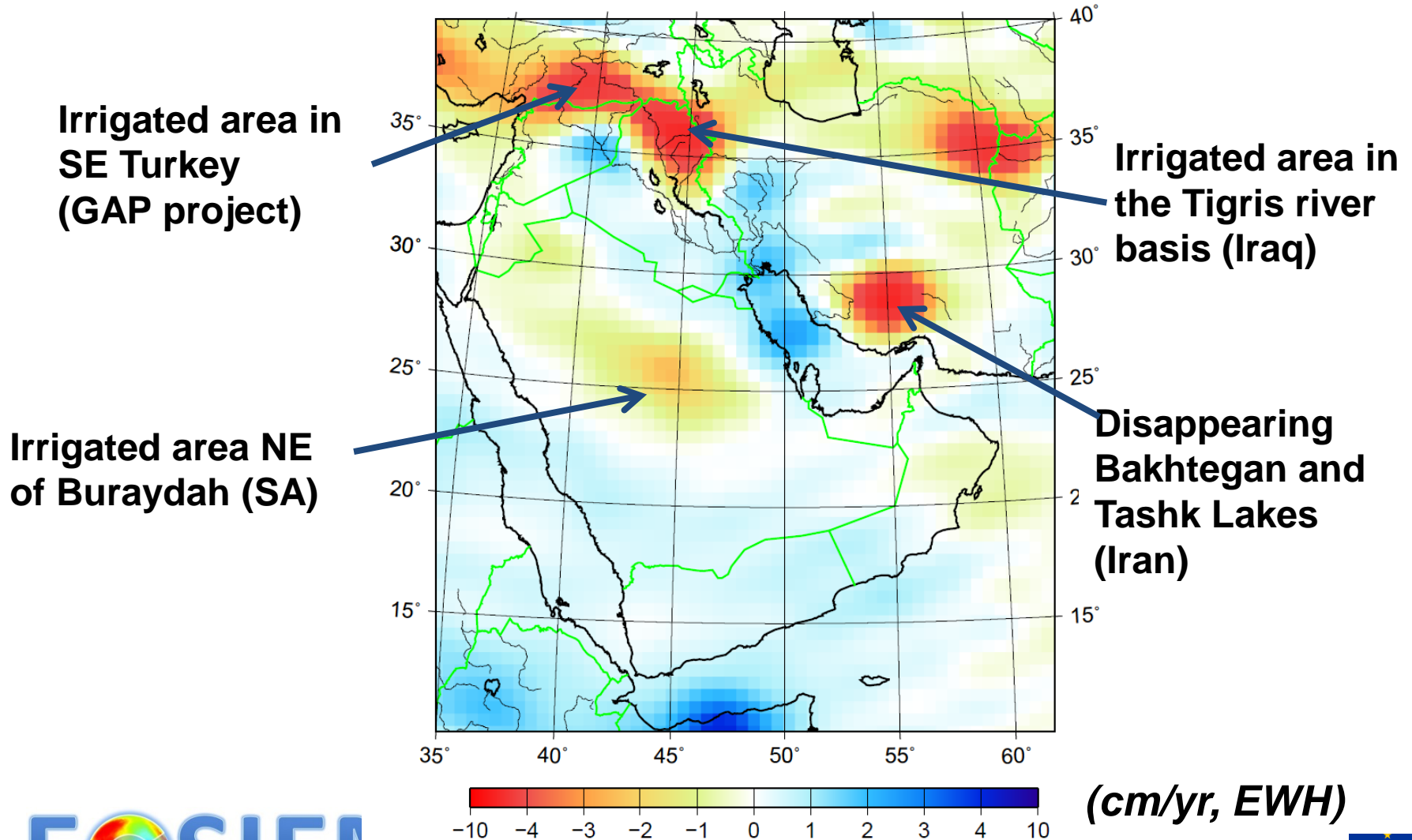
GRACE (CSR RL05, DDK5 filter)



Satellite altimetry (EnviSat)



Mass trend in 2003-2008 in the Middle East (Delft optimally filtered solution)



(Proposal "Global monitoring of trends in groundwater resources from space" submitted to NWO)