# Delft Corner Reflector experiment:
# ERS-2, Envisat and leveling validation


Leveling heights relative in time and relative to fixed point
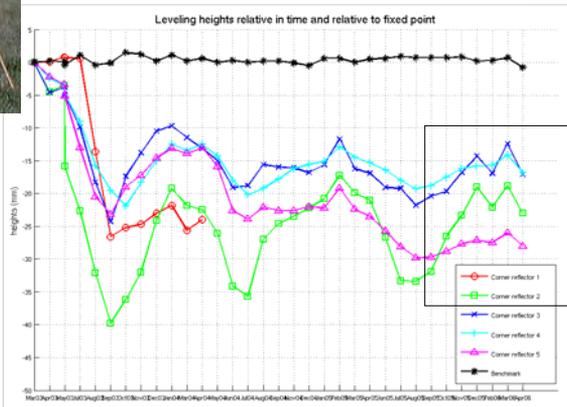
Objectives:
- Validation PS-InSAR observations.
- Continuation ERS-2 and Envisat.
- Utilization of ERS-2 high Doppler acquisitions.
- Subsurface deformation monitoring.
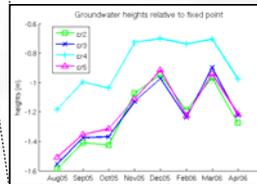

Ground water time series
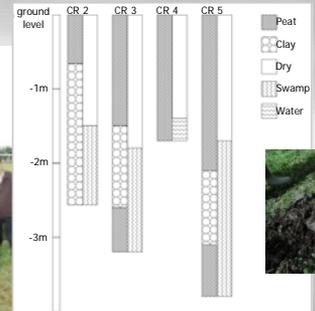


- Four corner reflectors have been deployed, 200 m apart.
- Monitoring period March 2003 – April 2006.
- Corner reflectors exhibit a large seasonal trend, > 1 cm.
- Each satellite pass, a leveling campaign is performed.
- Since August 2005 ground water levels are measured.

Comparison InSAR – leveling:
- Precision leveling heights 0.5-1 mm (1 sigma).
- Double-difference observations w.r.t. corner reflector 3.
- Both ERS-2 and Envisat InSAR observations show good correspondence with leveling sequence.
- Precision corner reflector InSAR measurements ~2 mm, based on a posteriori estimation.

Phase correction for sub-pixel position required for ERS-2 high Doppler images

No correction
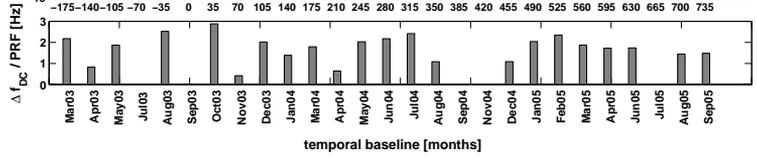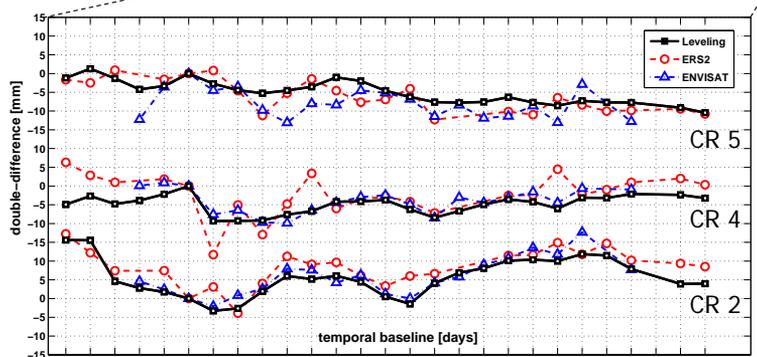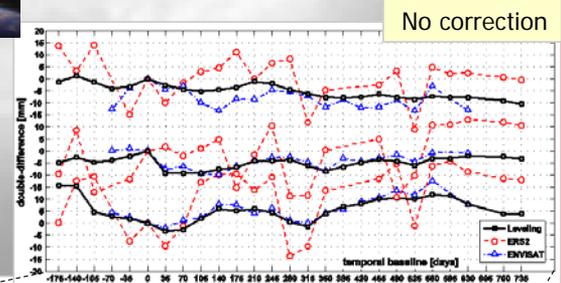


Phase observations corrected for sub-pixel position



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