Report on CEOS WGCV SAR Subgroup Activities

CEOS WGCV 38th Plenary

NOAA Center for Weather and Climate Prediction
College Park, MD, USA
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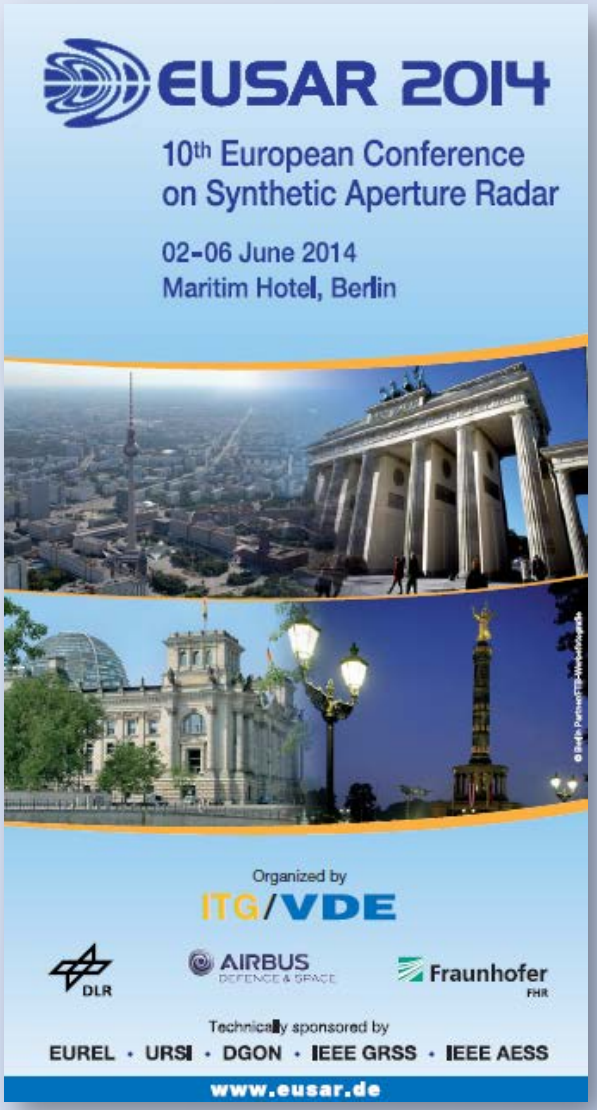
M. Zink

Chair CEOS WGCV SAR Subgroup
German Aerospace Center (DLR)
manfred.zink@dlr.de

http://sarcv.ceos.org



CEOS

combined with the
21st CEOS SAR Calibration and Validation Workshop

- **530 participants from 37 countries**
- **250 oral & 135 poster presentations**

CEOS SAR CAL/VAL Workshop 2014

- As part of the EUSAR conference:
  - 3 Calibration sessions
  - Poster session: Calibration & Validation
  - RADARSAT-2 & RCM session
  - TerraSAR-X & TanDEM-X sessions
  - Wave Propagation sessions

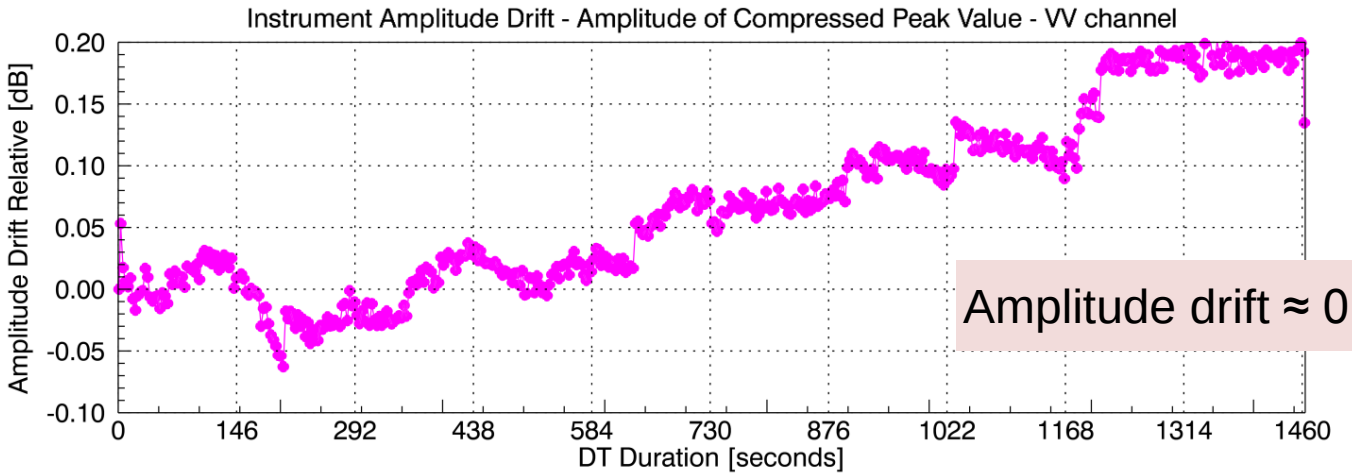
- Dedicated CEOS session on 06-June:
  - Summary of cal/val sessions
  - Test sites & targets (CEOS Work Plan Action CV-2: Website for SAR calibration sites and targets)
  - QA4EO (traceability of calibration requirements)

Highlight of EUSAR / CEOS SAR WS

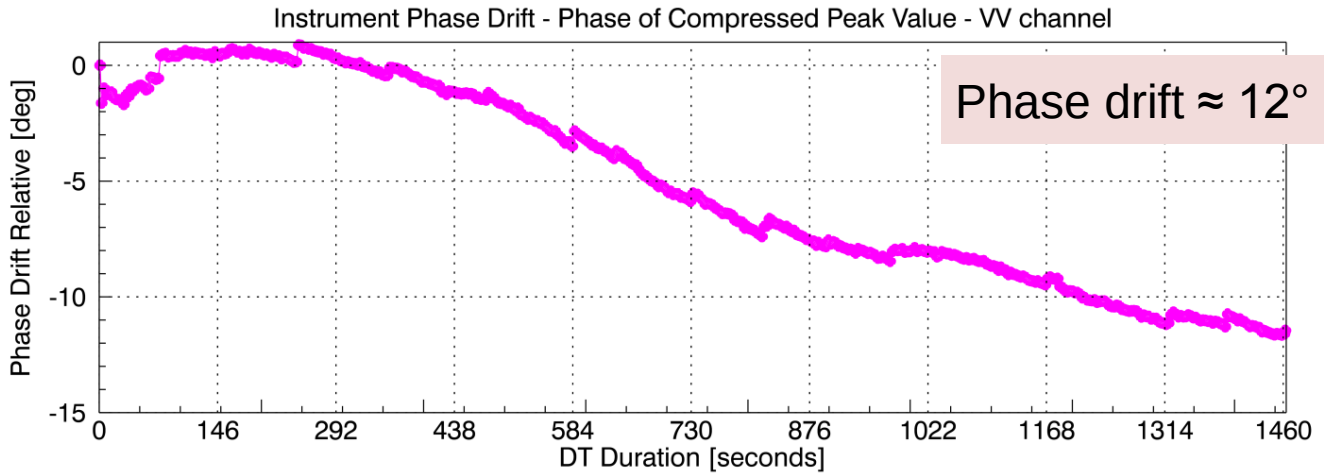
Sentinel-1A

ALOS-2

S-1A Instrument Drift for Long EW (VV)



Amplitude drift ≈ 0.2dB



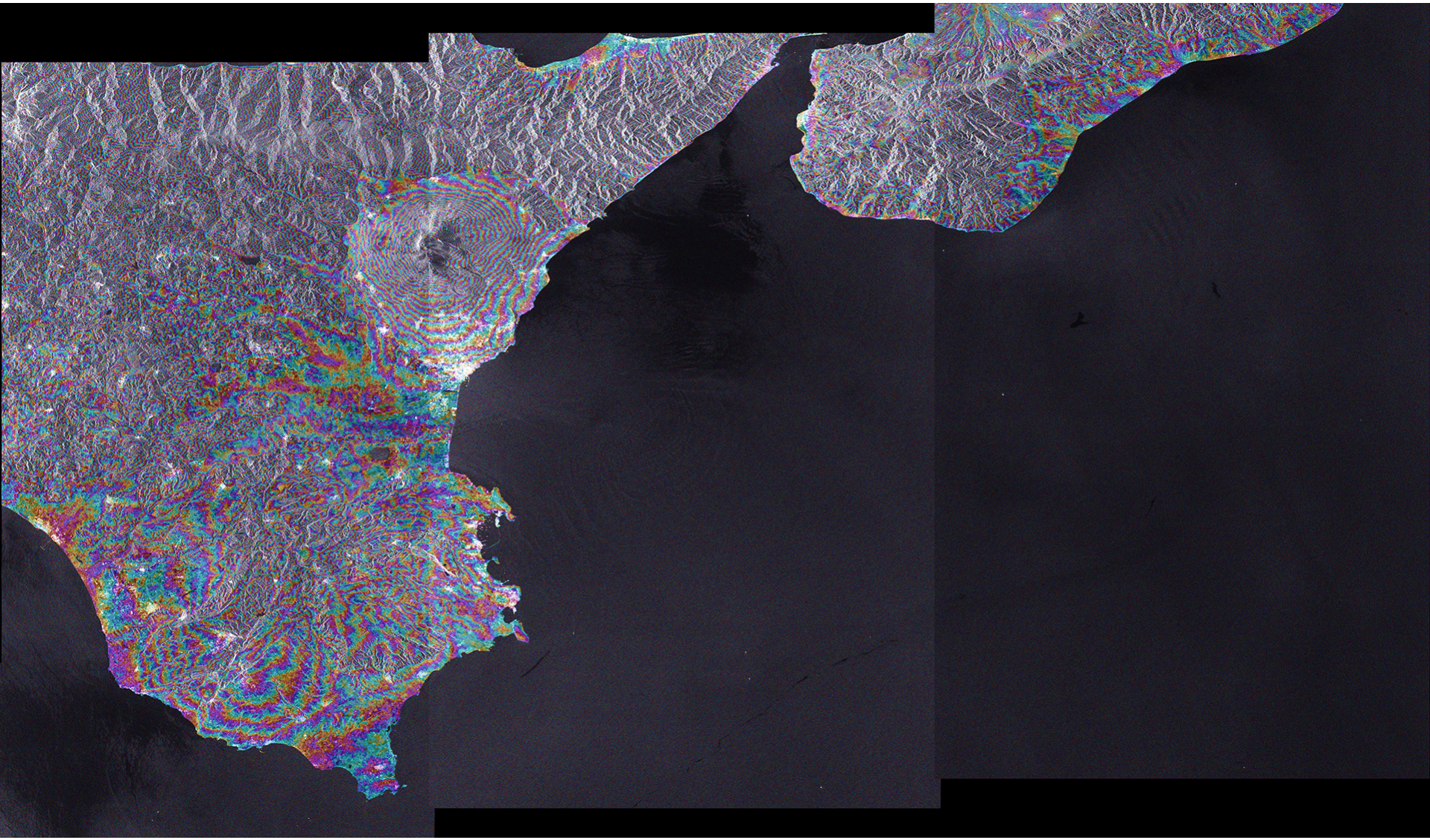
Phase drift ≈ 12°

- EW mode
- VV channel
- Duration = 24.39 min
- Date = 13.04.2014

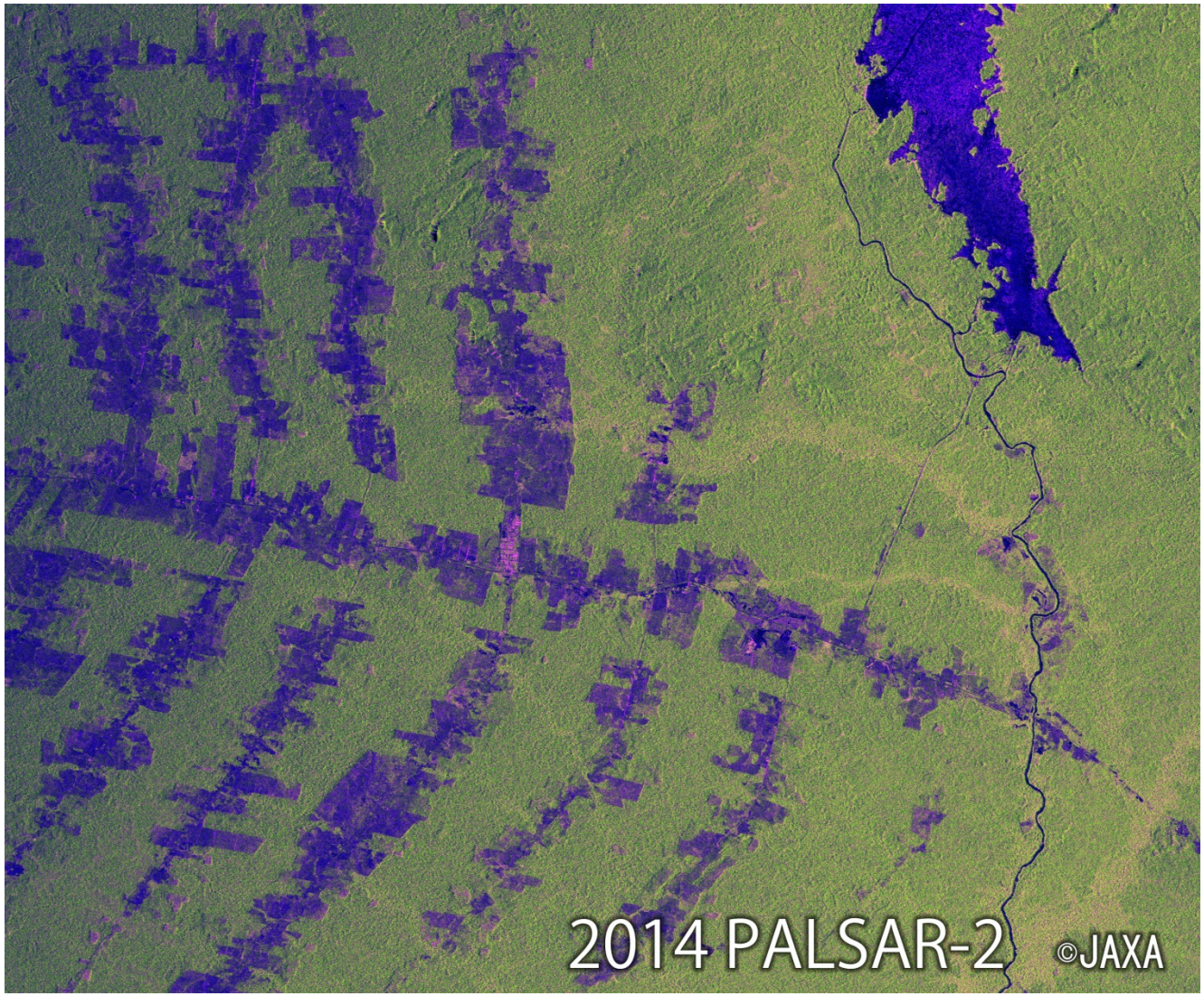
✓ Instrument drift compensation

✓ Instrument very stable over long time (aprox. 24 min)

Etna, Sicily: Sentinel-1A TOPS Mode Interferogram



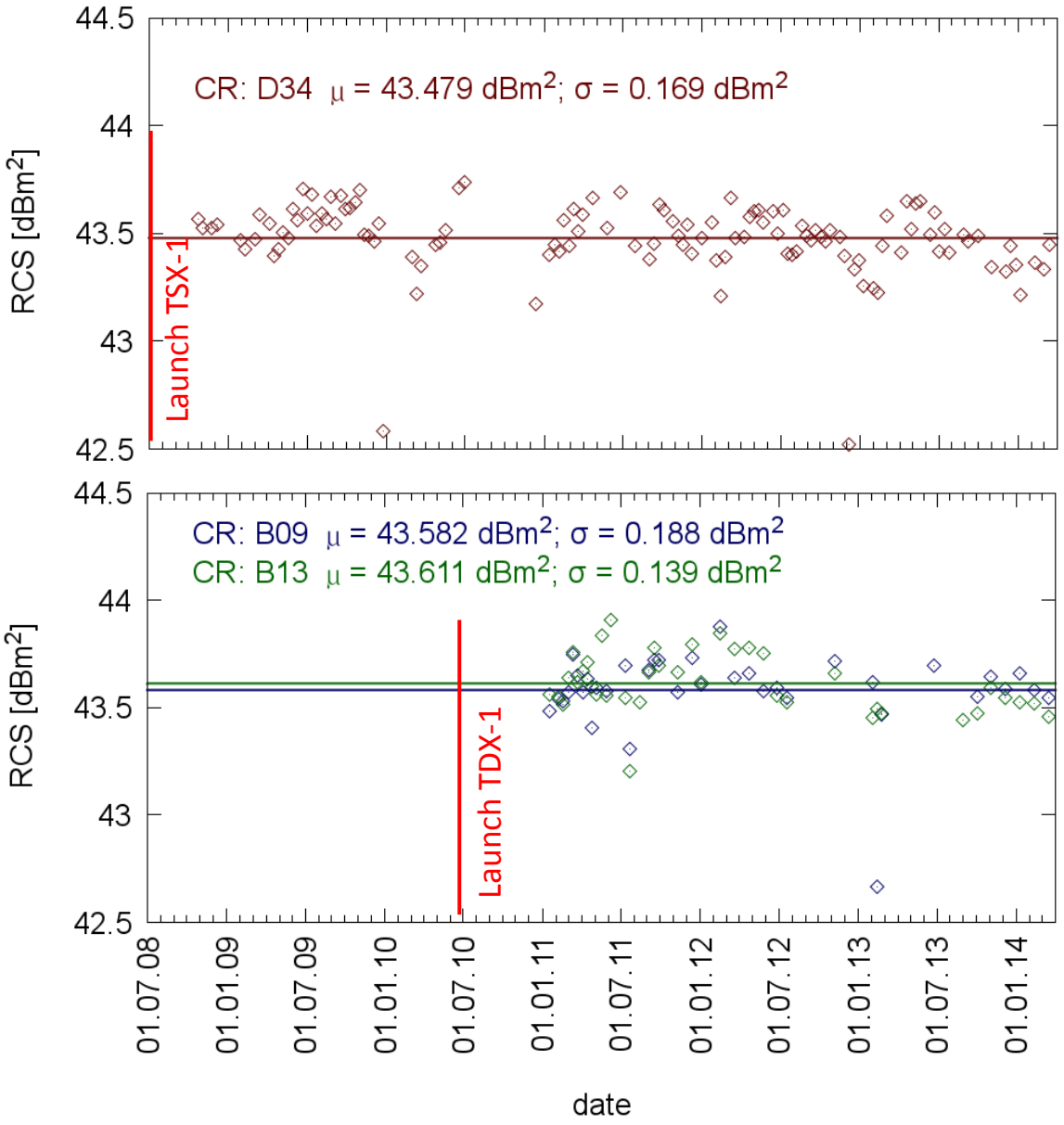
ALOS-2: Deforestation in the Amazon



Point Target Analysis – Radiometric Stability

LTSM TSX-1
7 years

LTSM TDX-1
4 years



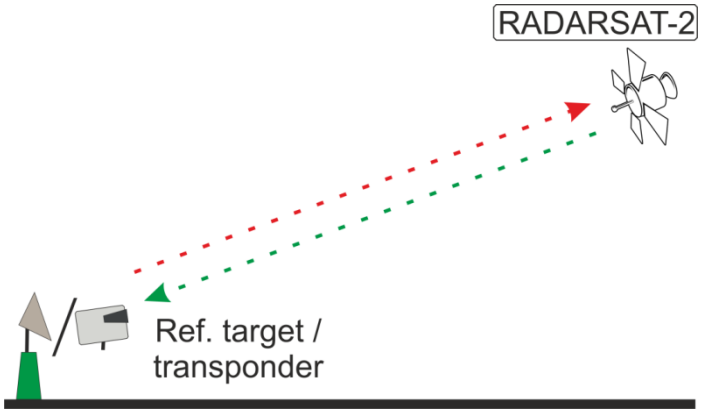
The standard deviation over life time of the target RCSs is a measure for the radiometric stability of both systems (TSX / TDX)!

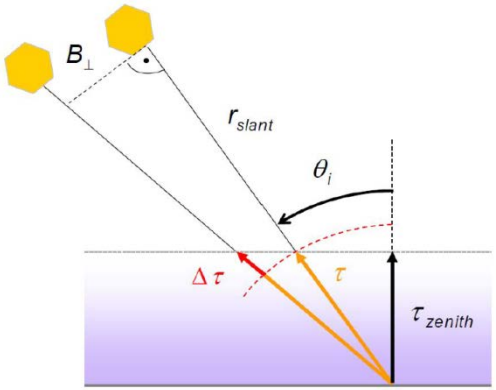
High radiometric stability
< 0.2 dB
for both satellites over monitored period

(Req.: 0.5 dB over 6 month)

Current Efforts of the SAR Subgroup

- Precise transponder development & absolute radiometric calibration
- Characterisation of rain forest ongoing
- Investigation of propagation effects especially through the ionosphere
- Calibration of compact polarimetry (transmit circular and receive horizontal & vertical polarizations)





CEOS SAR CAL/VAL Workshop 2015

- Intensive discussion in dedicated CEOS sessions at ASAR 2013 and EUSAR 2014
- One full day too short
- 22nd CEOS SAR CAL/VAL WS as a standalone event
- Host/location tbd