

# The DLR SAR Calibration Center

Synthetic aperture radar (SAR) systems require radiometric, polarimetric and geometric calibration to generate products with high quality and known tolerances. DLR's Microwave and Radar Institute has been an active player in SAR calibration from the very beginnings and has built up more than 25 years of experience. For this purpose, the Institute has been established the DLR SAR Calibration Center located in Oberpfaffenhofen. Innovative and efficient calibration techniques and algorithms have been developed to further improve SAR system accuracy and to tackle the complexity of today's and future spaceborne SAR systems. In addition to several analysis and evaluation tools developed and maintained by the Institute, a wide range of different calibration targets has been designed, developed and calibrated. These targets are deployed and operated within the DLR calibration field which is located in Southern Germany.

New motorized and remote-controlled 2.8m trihedral corner reflectors and ultra-stable C-band transponders have been permanently deployed. These targets are currently aligned for ESA's recent Copernicus mission Sentinel-1A, but are also suitable for upcoming missions. Huge effort has been spent on the absolute calibration of the transponders by employing three different measurement techniques. Thus, high precise and stable targets have been available, which formed a solid basis for the DLR's independent Sentinel-A calibration campaign executed in 2014.

The talk will give an overview over past and future SAR missions the DLR SAR Calibration Center was and is involved in. The employed calibration targets will be presented as well as their design. Prospective challenges in SAR calibration and upcoming activities of the DLR SAR Calibration Center will be addressed.

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