

## Processing of RADAR based Digital elevation models by using X- and C-band SAR data to generate soil and ecosystem parameters in spatially high resolution

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### **Abstract:**

The project aims at the synergistic use of X- and C-band SAR-satellite data from the present national (DLR: TerraSAR-X, TanDEM-X; CSA: RADARSAT-2) and European missions (ESA: Sentinel-1) of the space agencies. The work focus is on the modification of the forthcoming digital elevation model (DEM) from the TanDEM-X Mission for applications that are related to the spatially explicit modeling of processes and parameters of the land surface and topsoil layer in particular. The modeling of soil, hydrologically and ecologically relevant parameters of the land surface is only viable, when the height of the DEM that is used for 3D-modelling characterizes the non-vegetated bare ground rather than the canopy surface or other objects on the ground. In this context, the project delivers a workflow for the adaptation of the surface height and shape to the ground height without any prior knowledge of the absolute object height. The workflow will be tested for forest areas. The parameters that are needed to characterize the forest structure in relation to the object height will be solely derived from X- and C-band SAR features of the above mentioned systems.

### **BoDEM**

**Duration:** 01.01.2016 - 31.12.2018

**EO Data Source:** TanDEM-X, TerraSAR-X, Sentinel-1A, RADARSAT2

**Support Program:** Development of X and C-band SAR applications

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