



## **An overview of geoscience studies enabled with the UAVSAR instrument**

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UAVSAR is an L-band combined synthetic aperture radar/airborne platform system designed specifically for high spatial resolution differential interferometry (DInSAR) in support of solid earth geoscience. In addition to the InSAR capability, UAVSAR's low noise floor, fine spatial resolution, precise repeat imaging geometry, consistent calibration accuracy, vegetation canopy penetration capability, and complete (quad) polarimetric imaging make it a unique instrument for polarimetric synthetic aperture radar (PolSAR) studies. In the years since UAVSAR science acquisitions commenced, the instrument has supported a broad array of basic and applied geoscience, including InSAR-based studies of volcanoes, plate tectonics and earthquake faults, landslides, subsidence, sinkholes, and glaciers and ice sheets; PolSAR and InSAR studies of biomass retrieval and ecosystem/vegetation status; PolSAR studies of soil moisture, ocean eddies and oil slick characterization; and application of polarimetry in support of archeology and for monitoring critical infrastructure. Here we show the range of unique results that have come out of the scientific studies utilizing UAVSAR data; highlight new work that is in progress; give an overview of the spatial and temporal extent of the acquired data covering four continents that is freely available to researchers through NASA; and discuss plans for extended capability of the instrument system.

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