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Advanced Land Observing Satellite-2: Mission Status and Forest Observation

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Advanced Land Observation Satellite-2 (ALOS-2) was launched on May 24, 2014, carrying the L-band Synthetic Aperture Radar (PALSAR-2) to the low polar orbit of 628km-height with 14-day revisit time. To the four mission objectives, i.e., 1) disaster mitigation, 2) environmental monitoring represented by the forest monitoring and cryospheric monitoring, 3) land monitoring, and 4) technology development, PALSAR-2 and ALOS-2 provide the 1˜3m high resolution Spotlight and Strip with multi polarization with an imaging swath of 50˜70km, ScanSAR imaging with 350˜490km swath with dual polarizations, shorter temporal baseline of 14 days and spatial baseline of within 500m of radius, shorter time delay of less than 72 hours (74 hours in worst case) for emergency observation request to the disaster area, and almost all of global beam synchronization for ScanSAR Interferometry. ALOS-2 science program initiates the JAXA's Calibration, Validation, Application researches of the PALSAR-2/ALOS-2 and Pi-SAR-L2. As the application research, the disaster mitigation and the urban area monitoring using the high-resolution data should contribute significantly to the human society since the disasters occur frequently and globally. High resolution and multi polarimetric SAR with the shorter revisit time reserves the quicker detection of the land changes. In this presentation, we will summarize the contents of the ALOS-2 science program, its expected outcomes, and comparative study results with PALSAR.

Keywords: L-band SAR, Forest Observation, Calibration and validation, SAR interferometry