

RADARSAT-2 Spaceborne SAR: Practical Applications For Large Area Monitoring

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Abstract

Since the launch of RADARSAT-2 in 2007, a number of important enhancements to the satellite's space and ground segments have been implemented. These enhancements improve the capability of RADARSAT-2 for land-based change detection and monitoring. Enhancements and improvements include:

- Implementation of unique imaging modes that combine high resolution and wide swath widths
- Development of methodologies for systematic change detection that benefit from exactly-repeated radar illumination geometries of spaceborne SAR
- Generation of a strategic Image Archive of acquisitions using the new image modes specifically for the purpose of change detection and other SAR applications

These improvements enhance the use of SAR for many land applications and allow a more natural use of SAR as a tool for change detection, monitoring and surveillance. The dynamic nature of the data collected with SAR makes it a much more powerful tool for change detection, when compared to the interpretation of individual images common with optical solutions. Applications include the monitoring of forests, emergency response, natural hazards damage assessment and urban monitoring. The key strengths of spaceborne SAR include acquisition reliability independent of clouds and darkness and its repeatable microwave illumination source. With sufficient resolution and temporal coverage, spaceborne SAR is an efficient and practical tool for operational Earth observation.

During this presentation, Mr. van der Kooij will provide an overview of these new capabilities and will illustrate the benefits using a number of compelling examples from international areas of interest.

Keywords

Satellite, SAR, Monitoring, Forest