

GC431-1632: The JECAM SAR Inter-Comparison Experiment: Comparing agriculture classification results utilizing a well-established operational decision tree methodology incorporating a variety of C-band SAR and optical imagery applied to 13 worldwide, diverse agriculture systems.

Thursday, 13 December 2018

13:40 - 18:00

📍 Walter E Washington Convention Center - Hall A-C (Poster Hall)

Synthetic Aperture Radar (SAR) data have been incorporated in operational crop inventories with many advantages, particularly the availability of data under cloudy conditions and the structural information that is gained for agricultural vegetation. The Joint Experiment for Crop Assessment and Monitoring (JECAM) is the research and development branch of GEOGLAM (Group on Earth Observations Global Agricultural Monitoring), a G20 initiative to improve the global monitoring of agriculture through the use of Earth Observation (EO) data and remote sensing. The JECAM SAR Inter-Comparison Experiment, led by Agriculture and Agri-Food Canada (AAFC), is a multi-year, multi-partner project that aims to compare global methods for SAR crop monitoring and inventory. AAFC's operational SAR/optical crop inventory decision tree-based methodology has been successfully used to classify the agriculture extent of Canada since 2011. Data sets of RADARSAT-2 and Sentinel-1 SAR imagery, and optical imagery including Landsat8 and Sentinel-2 were prepared for this experiment using a suite of best practices to ensure consistency across 13 participating sites. The results from applying AAFC's operational crop inventory methodology to the other JECAM partners' sites will be discussed for optimized data sets of: one SAR and one optical image per month of the growing season; a SAR only data set utilizing all available C-band data for a growing season; and for a "kitchen sink" data set where all available SAR and optical data for a growing season were included in the classifier. Preliminary results from other JECAM Partners' crop classification methodologies will be discussed. Finally, there will be a brief discussion on the next two components of the JECAM SAR Inter-Comparison Experiment, including the use of compact polarimetry parameters for crop identification and monitoring, and the use of multi-frequency SAR for crop classification.

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