
[EE] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

[M-IS05] Satellite Land Physical Processes Monitoring at Medium and High Resolution

convener: Jean-Claude Roger (University of Maryland College Park), Shinichi Sobue (Japan Aerospace Exploration Agency), Eric Vermote

Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

We solicit papers on the land physical processes monitoring. In particular, it will include the inversion and use of reflectance products from Landsat(s) and Sentinel 2 sensors with other sensors. For the last years, medium and high resolutions became a useful and a powerful tool for Earth studies. Agriculture applications will be analyzed. An attention to the errors and uncertainties of the described products is suggested.

Topics of interest mainly include (not limited to):

- Use of products in agricultural monitoring applications (such as crop area, crop type, crop growing, yield estimation and prediction, damage assessment);
- Atmospheric corrections (including Cloud screening, Aerosol inversion, Radiative transfer...);
- Agriculture monitoring algorithm description;
- Data integration / Harmonized products from different sensors;
- Theoretical studies for sensors capabilities enhancements (e.g. addition of spectral bands) to future sensors for agriculture application;
- Development and use of new vegetation indices (i.e. red edge) and other products for agriculture applications;
- Evaluation or validation of potential products with ground measurements, official statistics;
- International initiative to enhance Earth-Observing-based agricultural information...

Depending on outcome, we think about a special issue.

[MIS05-P04] HLS Surface Albedo Estimation and Evaluation Against In Situ Measurements Across the Australia OzFlux network

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Keywords: Albedo, HLS, OzFlux

Surface albedo is an essential parameter not only for developing climate models, but also for most energy balance studies. While climate models are usually applied at coarse resolution, the energy balance studies, which are mainly focused on agricultural applications, require a high spatial resolution. The albedo, estimated through the angular integration of the BRDF, requires an appropriate angular sampling of the surface. However, Landsat 8 and Sentinel 2 sampling characteristics, with nearly constant observation geometry and low illumination variation, prevent from deriving a surface albedo product. In this work we apply an algorithm developed to derive a Landsat surface albedo to the HLS product, that includes both Landsat and Sentinel 2 images. It is based on the BRDF parameters estimated from the MODerate Resolution Imaging Spectroradiometer (MODIS) CMG surface reflectance product (M{O,Y}D09) using the VJB method (Vermote et al., 2009). HLS unsupervised classification images are used to disaggregate the BRDF parameters to the HLS spatial resolution (30m). We test the results over different OzFlux stations across the South Eastern Australia and plot the results versus albedo field measurements.