
[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-P02] Sugarcane productivity modeling using vegetation index

*Aline Kuramoto Goncalves¹, Victor Costa Leda¹ (1.Sao Paulo State University)

Keywords: Multiple linear regression, NDVI, MSAVI2, EVI, Landsat 8

The production of sugarcane is a highlight in an economic scenario in the state of São Paulo, Brazil, thus confirms it the largest producer and exporter of sugar and ethanol. For monitoring of this culture, in order to contribute to improvements in making and operational planning. However, conventional production and productivity of sugarcane are sometimes costly and estimates do not have high precision methods. In this sense, the work aimed at the development of mathematical models to explain the productivity of sugarcane through geoprocessing and remote sensing techniques associated to vegetation indices, used were the images of the satellite Landsat 8, with orbit / point 221/076. For the four analyzed indices the NDVI - Index of Vegetation by Normalized Difference, SAVI - Index of Adjusted Vegetation to the Soil, MSAVI-2 - Index of Modified Soil Adjusted Vegetation Index 2 and EVI - Index of Enhanced Vegetation Index, NDVI was promising to present a good correlation with productivity. The experiment was conducted in commercial area of Agrícola Rio Claro, partner of Zilor group, which is located on Lençóis Paulista and Pratânia, São Paulo State, Brazil of approximately 6000 hectares, with altimetry ranging between 600 and 700 meters. The results of the work, it was found that the modeling were satisfactory, varying the coefficient of determination between 0.15 to 0.97. Given that in periods with high coefficients of determination areas may be generally found in clusters, suggesting a lower incidence of variables. While in periods of low

determination coefficients were obtained most likely due to other factors listed have occurred as a dispersion of the plots in the area, soil types, rainfall and varieties, probably different.