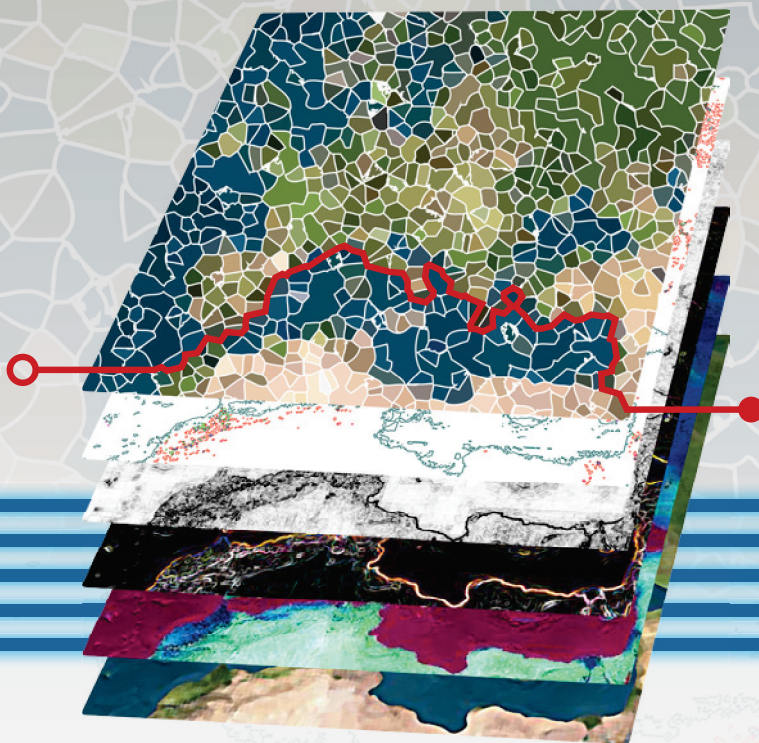


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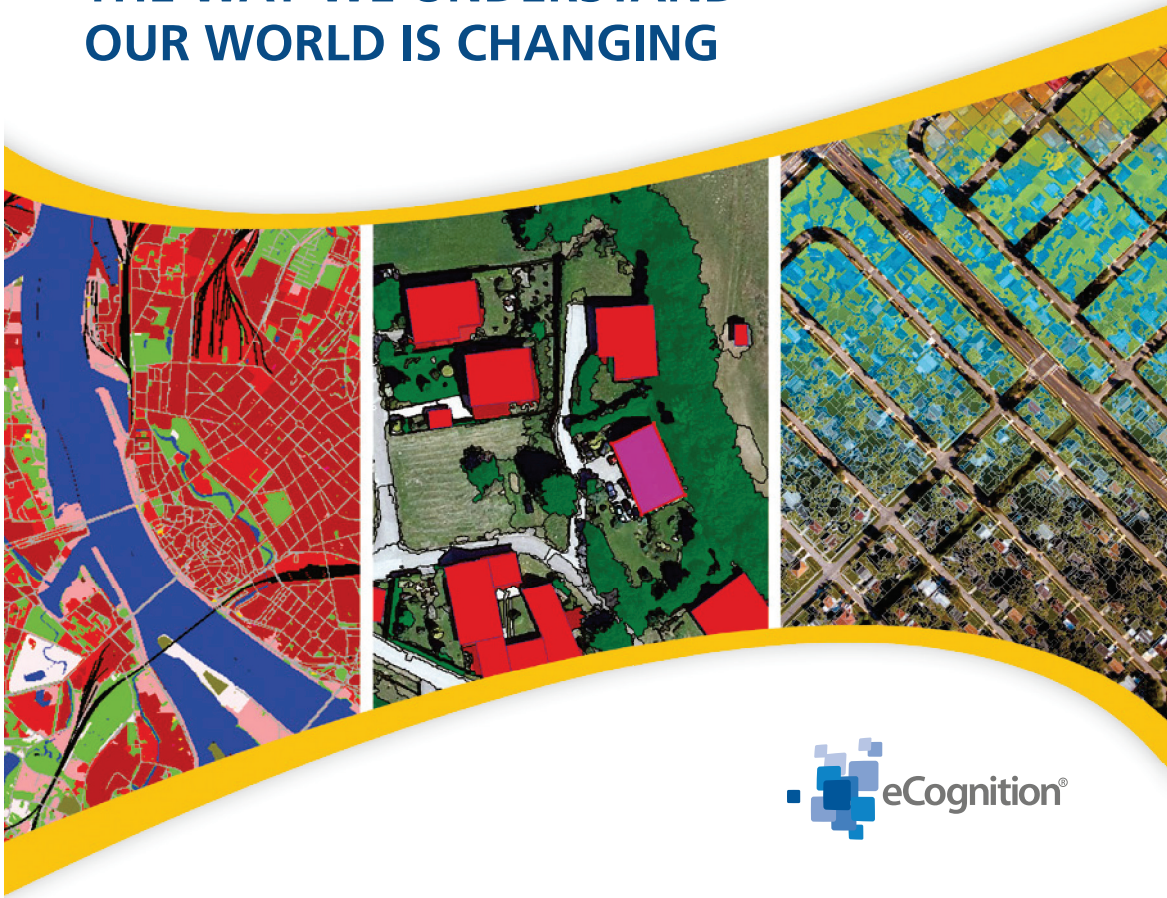
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**GEOBIA 2014
Advancements,
trends and
challenges,
5th Geographic
Object-Based Image
Analysis Conference,
Thessaloniki,
Greece, May 21-24,
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DATA MINING AND OBJECT BASED IMAGE ANALYSIS APPLIED TO SOYBEAN AREAS CLASSIFICATION THROUGH TIME-SERIES TM/ETM + IMAGES

B. Schultz¹, G. Bertani¹, M.A. Vieira¹, I.D.R. Eberhardt¹, A.R. Formaggio¹, A.J.B. Luiz², C. Atzberger³

¹ Remote Sensing Division, Brazilian National Institute for Space Research, Brazil

² Brazilian Agricultural Research Corporation – EMBRAPA Environment, Ministry of Agriculture, Livestock and Food Supply, Brazil

³ Institute of Surveying, Remote Sensing and Land Information, Department of Landscape, Spatial and Infrastructures Science, University of Natural Resources and Life Sciences, Vienna, Austria

KEYWORDS: Multiresolution segmentation, J48, agricultural statistics, soybean cultures

This study was conducted in order to map soybean plantations through the use of temporal series of ETM + / Landsat-7, together with the approach Object Based Image Analysis (OBIA) and Data Mining (DM). This approach allowed using the knowledge about the characteristics of Soybean cycle in the classification process. The study area corresponds to three cities in the state of São Paulo, namely: Guara, Ipuã and San Joaquin Barra. To generate image objects was used the Multiresolution Segmentation algorithm, implemented on the E-cognition platform. The knowledge model was obtained from the J48 algorithm, which generated a decision tree and was implemented in the WEKA platform. The training set used to generate the decision tree corresponds to the areas identified in Soybean growth stages on the following dates: September and October (2000); February and March (2001). After obtaining the knowledge model a thematic map of soybean was generated through the Hierarchical Classification Algorithm in E-cognition platform. The map had overall accuracy and kappa coefficient equal to 98.69% and 0.97, respectively. The results show that the classification of soybeans areas, performed through the application of the approach DM + OBIA in temporal series of TM / ETM +, can be considered efficient, and it is a promising alternative to the process of agricultural monitoring.