Data Mining and Spatial Reasoning for Satellite Image Understanding

Corina VADUVA(1), Daniela FAUR(1), Inge GAVAT(1), Mihai DATCU(2)

corina.vaduva@gmail.com, danielafaur@gmail.com, i_gavat@yahoo.com, mihai.datcu@dlr.de

(1) University POLITEHNICA Bucharest, Faculty of Electronics, Telecommunications and Information Technology, 313 Splaiul Independenței 060029, Bucharest,

(2) German Aerospace Center DLR Oberpfaffenhofen, D-82234 Wessling, Germany

High level scene understanding requires analysis of spatial interaction between scene objects. This paper presents an extension for a knowledge based image information mining system (KIM) based on statistical models and machine learning methods which is able to extract and spatially characterize objects in a remote sensing image. A method to explore the image content considering the positioning of image’s nearby regions is attached. Through the processing chain the objects are extracted by KIM according to a user interest. In order to perform automatic complex feature extraction, invariant signatures for spatial configurations are computed using an improved and simplified version of the force histogram.