

Urban Land Cover Mapping Using Optical and SAR Images

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Abstract: For several decades, single-source multispectral RS data sets have been successfully used for land cover mapping and for the generation of thematic information, diverse supervised and unsupervised classification methods have been applied. Unlike single-source images, data sets from multiple sources have proved to offer better potential for discriminating between different land cover types. Many authors have assessed the potential of multisource images for the classification of different land cover classes. So, the aim of this study is to conduct urban land cover mapping of Ulaanbaatar, the capital city of Mongolia using optical and synthetic aperture radar (SAR) images. To extract the reliable urban land cover information from the available RS data sets, a refined maximum likelihood classification algorithm that uses spectral and spatial thresholds defined from the local knowledge is constructed. Overall the research indicates that the spectral and spatial thresholds defined from the local knowledge could considerably improve the performance of the classification.

Keywords: Optical, SAR, Urban land cover, Classification