

عنوان مقاله:

Multi-resolution segmentation for identifying green spaces from satellite images

محل انتشار:

سومین کنفرانس بین المللی معماری، عمران، شهرسازی، محیط زیست و افق های هنر اسلامی در بیانیه گام دوم انقلاب (سال: 1402)

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خلاصه مقاله:

High-resolution satellite products have provided new capabilities for cartography and remote sensing tasks. In this regard, Object-Based Image Analysis (OBIA) has been considered the best option for working with high-resolution satellite images. OBIA considers spatial, textural, geometric, and spectral features of the image. The first step in OBIA is segmentation, which needs to be optimally performed in order to achieve satisfactory results in the second step, classification. The main objective of this research is multi-resolution segmentation for identifying green spaces from multi-spectral satellite images (specifically WorldView2 orthoimages) using eCognition software. The main focus of this article is finding optimal parameters for multi-resolution segmentation, including shape, scale, and compactness parameters. The optimal scale parameter is determined based on the local variance of object heterogeneity that can be executed using ESP2 tool in eCognition. Additionally, segmentation using different combinations of shape and compactness parameters creates various results. To evaluate the segmentation results, differences between the segmentation results obtained with eCognition software and manually determined reference polygons are used. As a result, the best parameters for shape, scale, and compactness are estimated. Three difference indices are used to evaluate the segmentation results: potential segmentation error, number of segments ratio, and Euclidean distance

کلمات کلیدی:

Resolution, segmentation, satellite images, eCognition software

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