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URBAN FOREST CANOPY EXTRACTION USING LIDAR DATA

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Abstract

Urban Tree Canopy (UTC) is an important asset in the urban ecological system by reducing the heat, runoff and improving air quality. Estimating the available urban tree canopy is important for decision makers for better understanding of urban ecosystems and helps to improve environmental quality and human health in urban areas and plan conservation activities. This paper reports on an object-oriented tree extraction method developed by using spectral and textural information of High-Resolution (HR) aerial imagery and normalised Digital Surface Model (nDSM) information derived from Light Detection and Ranging (LIDAR) data. The image was segmented by edge-based segmentation algorithm and classified using the Support Vector machine (SVM) algorithm. The results showed that the proposed object-oriented method provides better classification with an overall accuracy of 88%.

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