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Building and Tree Detection Using Multiscale Matched Filtering

Authors : Abdullah H. Özcan, Dilara Hisar, Yetkin Sayar, Cem Ünsalan

Abstract : In this study, an automated building and tree detection method is proposed using DSM data and true orthophoto image. A multiscale matched filtering is used on DSM data. Therefore, first watershed transform is applied. Then, Otsu’s thresholding method is used as an adaptive threshold to segment each watershed region. Detected objects are masked with NDVI to separate buildings and trees. The proposed method is able to detect buildings and trees without entering any elevation threshold. We tested our method on ISPRS semantic labeling dataset and obtained promising results.

Keywords : building detection, local maximum filtering, matched filtering, multiscale
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