AUTOMATED EXTRACTION OF PLANTATIONS FROM ORTHOPHOTOS USING A LEVEL SET BASED SEGMENTATION METHOD

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ABSTRACT:

In this article we present a method that extracts plantations from satellite imagery by finding and exploiting appropriate feature space projections. Segmentation is done using an automatic two-region segmentation based on the level set method. The behaviour of this algorithm is defined by a statistical region model that describes the similarity of regions using distances in arbitrary feature spaces. Subsequently different feature spaces will be evaluated regarding their plantation classification quality in an automatic fashion. The segmentation quality of our method is assessed by testing several orthophotos depicting a wide range of landscape types and comparing them with a manual segmentation. We show that a combination of simple texture based features like the structure tensor and the Hessian matrix are sufficient to facilitate an effective plantation segmentation scheme.

TOPIC: Land cover classification
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