FARMLAND PARCELS EXTRACTION BASED ON HIGH RESOLUTION REMOTE SENSING IMAGES

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ABSTRACT:

Extracting farmland parcels from high resolution remote sensing images is an important issue for land-use dynamic monitoring, precision agriculture and other fields. However, the traditional method, using GIS software and manual digital, has wasted a lot of human and material resources. In addition, the results are impacted by the human factors obviously. Therefore, an automatically extraction method which does not require too much manual intervention is needed urgently. This paper presents a remote sensing images segmentation method based on wavelet transform and watershed segmentation to get the final segmentation results. Firstly, we use the classification results to enhance the contrast of typical features in the original image. Secondly, we use wavelet transform and watershed segmentation to calculate the enhanced image, and then use improved regional merging algorithm to solve the problem of over-segmentation. Finally, we reconstruct the image by inversed wavelet transform with the edge information from Canny operator, and then label the regions to get the final segmentation results. To validate the proposed approach, experiment on Quickbird image is performed, we extract farmland parcels from the image quickly and accurately. It shows that the proposed approach is an effective farmland parcels extraction method based on high resolution remote sensing images.

TOPIC: Land cover classification
ALTERNATIVE TOPIC: Land cover classification