

## 基于子波域自适应融合HMTseg算法的遥感图像分割

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**摘要** 提出了一种具有自适应融合机制的HMTseg算法, 用于遥感图像的分割. 该算法充分利用图像子波系数尺度间的统计相关性, 通过赋予各个尺度不同的背景权值, 兼顾了粗尺度分割的区域一致性和细尺度分割的边界定位准确性, 保持了图像各个同质区域的主体轮廓, 增强了辨别图像小目标的性能. 航拍图像和合成孔径雷达图像的分割结果表明, 该算法可以在分割的区域一致性和边界准确性之间做到较好的折中, 提高遥感图像分割的性能.

**关键词** [离散子波变换](#) [隐马尔可夫树模型](#) [图像分割](#) [自适应权重](#) [多尺度融合](#)

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## Remotely sensed image segmentation based on the wavelet-domain HMTseg algorithm with daptive fusion mechanism

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### Abstract

An HMTseg algorithm with the adaptive fusion mechanism is proposed for the segmentation of remotely sensed images. In this algorithm, the statistical correlation properties between wavelet coefficients across different scales are well employed. The initial segmentation results on coarse and fine scales are fused adaptively by the assignment of different contextual weights. This algorithm not only lays emphasis on the advantage of region consistency from the coarse-scale segmentation, thus preserving the main outlines of individual homogeneous regions, but takes into account the advantage of boundary location accuracy from the fine-scale segmentation, thereby favoring the discrimination of small targets within an image. Experimental results on remotely sensed images, including aerial photos and SAR images, demonstrate that the algorithm can improve the segmentation performance of remotely sensed images. <BR>

**Key words** [discrete wavelets transform](#) [hidden Markov tree model](#) [image segmentation](#) [adaptive weighting](#) [multiscale fusion](#)

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