

技术方法

运用多尺度图像纹理进行城市扩展变化检测

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摘要:

应用遥感数据检测城市扩展变化时, 单纯基于光谱信息的变化检测法很难取得理想效果。本文将多尺度的纹理与光谱信息结合应用于变化检测, 并评价其在检测城市扩展变化中的性能。变化检测采用分类后比较法。研究表明, 如果纹理尺度与数据组合合适, 与单纯基于光谱信息的检测结果相比, 纹理特征与光谱特征结合的变化检测精度显著提高, 而多尺度纹理辅助变化检测得到的检测精度最高。研究还发现, 纹理辅助变化检测在某些地物类别的边缘会产生假变化信息。

关键词: 城市扩展变化检测 分类后比较 纹理 多尺度

THE APPLICATION OF MULTISCALE IMAGE TEXTURE TO THE DETECTION OF URBAN EXPANSION

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Abstract:

It is difficult for remote sensing change detection based only on spectral information to obtain satisfactory results. In this paper, multiscale texture information combined with spectral information was adopted to evaluate the urban expansion detection by using the post-classification comparison technique. The results show that, if the scale for texture extraction and the data combination are appropriately selected, the addition of texture features in change detection can significantly improve the overall accuracy and Kappa coefficient in comparison with the method based only on spectral data. Moreover, the combination of multiscale texture and spectral data in change detection can produce the highest accuracy. However, it is shown that false alarm may appear on the edges of some land cover types when the texture information is incorporated in urban area change detection.

Keywords: Urban expansion detection Post-classification comparison Texture Multiscale

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