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基于多分辨率数据的干旱和半干旱地区地物模糊分类

Fuzzy classification of arid and semi-arid region features using multi-resolution data

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中文关键词: [隶属度函数](#), [遥感](#), [分类](#), [模糊分类](#), [多分辨率数据](#), [干旱半干旱地区](#)

英文关键词: [membership function](#) [remote sensing](#) [classification](#) [fuzzy classification](#) [multi-resolution data](#) [arid and semi-arid area](#)

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中文摘要:

为了进一步提高低分辨率遥感数据用于干旱和半干旱地区地物分类精度, 该文以新疆石河子垦区为研究区, 利用PSA (purposive selection algorithm) 算法结合地物分布的统计特性对样本窗口进行选择, 确定了最佳样本窗口组合; 采用概率密度估计的方法获取了真实的隶属度函数, 基于类别隶属度函数构建地物判别模型; 建立了多分辨率数据大尺度土地利用/覆盖遥感分类流程。研究表明, 借助高空间分辨率数据提取各地物类别的精细分布特征, 与Erdas非监督分类相比, 模糊分类的总体分类精度提高了20%。该研究可为低分辨率数据的研究与应用提供借鉴。

英文摘要:

To further improve classification accuracy of low-resolution remote data in arid and semi-arid areas, taking Shihezi county in Xinjiang province as the study area, sample windows were selected by combining PSA (purposive selection algorithm) algorithm and statistical properties of region features distribution and finally the best sample window combinations were identified. Authentic membership function was obtained by probability density estimation. Then features identifying model of the region was constructed based on category membership function, and the remote classification flowing chart of large-scale land using/covering was established by using multi-resolution data. The result showed that the classification accuracy of low-resolution data were effectively improved by extracting exquisite distribution characteristics of features in various regions through the high spatial identifying data, compared with method of Erdas unsupervised classification, the accuracy of fuzzy classification method was improved 20%. The research provides a useful reference and guidance in the researching and application of low-resolution data.

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