

吴 见,彭道黎.基于空间信息的高光谱遥感植被分类技术[J].农业工程学报,2012,28(5):150-153

基于空间信息的高光谱遥感植被分类技术

Vegetation classification technology of hyperspectral remote sensing based on spatial information

投稿时间: 2011-03-18 最后修改时间: 2012-01-17

中文关键词: [遥感](#),[植被](#),[分类](#),[高光谱](#),[最小噪声变换](#),[最大似然法](#)

英文关键词: [remote sensing](#) [vegetation](#) [classification](#) [hyperspectral](#) [minimum noise fraction](#) [maximum likelihood method](#)

基金项目:北京林业大学研究生科技创新专项计划项目(BLYJ201103);“十一五”国家科技支撑计划项目(2006BAD23B05)资助

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中文摘要:

高光谱数据常带有噪声,传统的仅考虑光谱信息的遥感植被分类方法效果不佳,融入空间信息进行植被分类显得尤为重要。以NDVI阈值法提取植被信息后,采用最小噪声变换对Hyperion高光谱影像进行压缩处理,取前60个分量数据,并采用一种空间与光谱信息相结合的高光谱影像植被分类法,完成研究区植被分类。结果表明,对各植被类型的平均分类精度达90.3%,而最大似然法的平均分类精度仅为70.0%。融入空间信息的高光谱遥感植被分类方法能有效地削弱噪声,在一定程度上提高了分类精度,在实际应用中有一定的参考价值。

英文摘要:

The vegetation classification effects of traditional remote sensing methods only considering spectral information are unsatisfactory because the hyperspectral data usually have noises, so it is particularly important to blend spatial information for vegetation classification. Firstly, vegetation information was extracted by NDVI threshold value, and minimum noise fraction (MNF) was used to compress Hyperion hyperspectral images, and the first 60 components were selected. And then a kind of hyperspectral image vegetation classification method with the combination of spatial and spectral information was applied to complete the vegetation classification in study area. The results indicated that the average classification accuracy of all vegetation types was 90.3%, while the average classification accuracy of maximum likelihood method was only 70.0%. The vegetation classification method of hyperspectral remote sensing combining spatial information can effectively weaken the noises and to a certain extent improve classification accuracy, so the method proposed in this paper has certain reference value in actual application.

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