

典型Otsu算法阈值比较及其SAR图像水域分割性能分析

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Otsu Threshold Comparison and SAR Water Segmentation Result Analysis

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摘要 遥感图像中水域呈现低灰度、灰度起伏小特性。该文从实时性出发,采用1维Otsu算法分割SAR图像。证明了两种典型Otsu分割算法的阈值关系,提出了分割性能评估方法,并通过实测SAR图像对比分析了多阈值分割与单阈值递归分割的水域分割性能。结果表明,与单阈值递归分割相比,多阈值分割能够更好地提取水域轮廓,且漏警率低,可应用于桥梁自动目标识别和景象匹配等方面。

关键词: 合成孔径雷达 水域分割 多阈值 递归分割

Abstract: Water shows low gray level and small wave from remote sensing images. As the fastest segmentation algorithm, 1D Otsu is used for Synthetic Aperture Radar (SAR) image segmentation. Level relation between multilevel Otsu and recursive Otsu is proved, and the evaluation of segmentation results is proposed, then quantitative comparison is given using SAR image. Results show that multilevel Otsu has better outline of water region, and can be used for SAR auto bridge recognition and scene matching.

Keywords: SAR Water segmentation Multilevel threshold Recursive segmentation

Received 2009-11-04;

本文基金:

新世纪优秀人才支持计划项目(NCET-06-0921)资助课题

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引用本文:

安成锦,牛照东,李志军,陈曾平.典型Otsu算法阈值比较及其SAR图像水域分割性能分析[J] 电子与信息学报, 2010,V32(9): 2215-2219

An Cheng-Jin, Niu Zhao-Dong, Li Zhi-Jun, Chen Zeng-Ping.Otsu Threshold Comparison and SAR Water Segmentation Result Analysis[J] , 2010,V32(9): 2215-2219

链接本文:

<http://jeit.ie.ac.cn/CN/10.3724/SP.J.1146.2009.01426> 或 <http://jeit.ie.ac.cn/CN/Y2010/V32/I9/2215>

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