

应用

基于道路信息和阴影检测的单幅高分辨SAR图像动目标检测方法

史洪印, 侯志涛, 郭秀花, 李景文

燕山大学信息科学与工程学院

摘要:

本文根据合成孔径雷达(SAR)运动目标的成像特点,提出了一种基于单幅高分辨率SAR图像的动目标检测方法。运动目标所成SAR图像是散焦的,同时偏离其真实位置,并在其真实位置处留下与目标大小近似的“阴影”区域。通过该阴影区域来实现运动目标的检测,没有盲速的限制,这种独立于回波的检测方法,使检测过程简单化。再结合道路辅助信息,可以完成运动目标的检测,精确定位以及参数的估计。

关键词: 单幅SAR图像; 动目标检测; 阴影检测; 参数估计

Moving Targets Indication Method in a Single High Resolution SAR Imagery Based on Road Information and Shadow Detection

SHI Hong-Yin, HOU Zhi-Tao, GUO Xiu-Hua, LI Jing-Wen

School of Information Science and Engineering, Yanshan University, Qinhuangdao

Abstract:

In this paper a novel technique is presented for detecting moving targets in a single high resolution Synthetic Aperture Radar (SAR) imagery based on the imaging characteristics of SAR moving targets. The SAR image of a moving target is blurred and displaced, however, the shadow casted by the moving target is focused and displayed at the actual target location, and the shadow size is the target dimensions. This moving targets indication method is simple, because it is implemented by shadow detection, it is out of the blind speed problem, it is incoherent and uncorrelated with the target direct returning energy. With the road information, the moving targets can be detected, accurately located and the motion parameters can be estimated.

Keywords: Single synthetic aperture radar imagery Moving targets detection Shadow detection Parameters estimation

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通讯作者:

作者简介:

作者Email: shihy@ysu.edu.cn

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