

基于联合特征导向矢量的多通道SAR地面动目标检测定位

周争光, 廖桂生

(西安电子科技大学 雷达信号处理重点实验室, 陕西 西安 710071)

收稿日期 2007-11-10 修回日期 网络版发布日期 2008-9-25 接受日期

摘要 提出了一种新的多通道合成孔径雷达动目标检测定位方法. 首先计算目标的特征系数矢量, 然后根据其在空域导向矢量和特征系数矢量构造联合特征导向矢量, 最后利用包含特征导向矢量的自适应权进行杂波抑制, 同时估计目标的运动速度, 进而对其重新定位. 仿真结果表明该方法对图像配准误差具有稳健性, 在图像配准误差达到一个像素的情况下, 该方法仍能获得与图像精确配准时相当的目标检测性能和测速定位精度.

关键词 [合成孔径雷达](#) [地面动目标检测](#) [配准误差](#) [联合特征导向矢量](#)

分类号 [TN957](#)

Approach to SAR ground moving target indication and localization based on the joint eigen steering vector for the multi-channel SAR system

ZHOU Zheng-guang, LIAO Gui-sheng

(Key Lab. of Radar Signal Processing, Xidian Univ., Xi'an 710071, China)

Abstract

A robust approach to ground moving target indication and localization is proposed for the multi-channel SAR system in the presence of coregistration errors. In the proposed approach, the joint eigen steering vector of a moving target is constructed according to its space steering vector and eigen coefficient vector, the optimal beamforming approach is used to suppress the clutter, the velocity of the moving target can be determined simultaneously, and the moving target can be relocalized subsequently. This method has good robustness to image coregistration errors, and can provide accurate estimate of the ground moving target radial velocity. The validity and superiority of this method are verified by simulated data.

Key words [synthetic aperture radar \(SAR\)](#) [ground moving target indication \(GMTI\)](#) [coregistration error](#) [joint eigen steering vector](#)

DOI:

通讯作者 周争光 zhou_z_g@sohu.com

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(806KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“合成孔径雷达”的相关文章](#)
- ▶ [本文作者相关文章](#)

- [周争光](#)
- [廖桂生](#)