

论文

超宽带合成孔径雷达金属地雷双峰特征增强算法

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摘要

机载超宽带合成孔径雷达(UWB SAR)探雷实用化的最大问题是虚警太多,而增强金属地雷双峰特征有助于有效剔除虚警。该文基于双峰显著度最大准则,提出了基于图像域后滤波器的双峰特征增强算法及后滤波器参数优化方法。实测数据处理结果表明,该算法能够有效提高怀疑目标中金属地雷的双峰显著度,从而提高最终金属地雷检测性能。

关键词 [合成孔径雷达](#); [地雷检测](#); [超宽带](#); [双峰特征](#); [特征增强](#)

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The Double-peak Characteristic Enhancement Algorithm for Metallic Landmine Detection with UWB SAR

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Abstract

The major problem in air-borne Ultra-WideBand Synthetic Aperture Radar (UWB SAR) landmine detection is the too many false alarms in practical operation, while enhancement of metallic landmine double-peak feature will benefit elimination of false alarms efficiently. In this paper, based on the double-peak salience maximum criterion, the double-peak feature enhancement algorithm using the post-filter in image domain and the post-filter parameter optimization method are proposed. It is proved with field data processing results that the proposed double-peak enhancement algorithm can increase the double-peak salience of metallic landmines among those suspected targets and thus improve the final metallic landmine detection performance.

Key words [Synthetic Aperture Radar \(SAR\)](#) [Landmine detection](#) [Ultra-Wide Band \(UWB\)](#) [Double-peak characteristic](#) [Feature enhancement](#)

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