[打印本页] [关闭]

扩展功能

论文

基于几何绕射模型的多频带信号融合新方法

本文信息

叶钒, 何峰, 朱炬波, 梁甸农

国防科技大学电子科学与工程学院

▶ Supporting info
▶ PDF(1046KB)
▶ [HTML全文]
▶ 参考文献[PDF]
▶ 参考文献

摘要：

多频带雷达信号融合处理利用从不同频段获取的目标在一维谱域呈稀疏分布的雷达观测数据，通过信号级相干融合来提高目标散射中心参数估计精度和一维距离像的分辨能力。传统谱估计类融合方法的性能都受限于模型阶数估计。而多频带的稀疏分布，破坏了观测系统矩阵的互相干性度量，从而使得基追踪（基于l1范数的稀疏表示）方法的全局最优解可能并不等于信号的真实稀疏表示。本文在GTD散射模型的基础上，提出了一种基于稀疏贝叶斯学习的融合方法，既避免了阶数估计，又克服了基追踪方法的缺陷。实验结果也表明了此方法的优越性。

关键词： 多频带雷达信号融合　GTD 模型　稀疏贝叶斯学习　基追踪

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
▶ 引用本文
▶ Email Alert
▶ 文章反馈
▶ 浏览反馈信息

A New Method of Multi   Band Radar Signal Fusion Based on GTD Model

 YE Fan, HE Feng, ZHU Ju-Bo, LI ANG Dian-Nong

School of Electronics Science and Technology, National University of Defense Technology, Changsha

本文关键词相关文章

▶ 多频带雷达信号融合
▶ GTD 模型
▶ 稀疏贝叶斯学习
▶ 基追踪

Abstract:

Using radar measurements from different frequency bands which are distributed sparsely in one dimensional spectrum, multi-band radar signal fusion can improve accuracy of estimation of radar target scattering model parameters and range resolution of the range profile by signal level's coherent fusion. The performance of traditional fusion based on spectrum estimation is limited by estimation of scattering model order. Furthermore, owing to sparse distribution of multi-band, the mutual coherence of observation system matrix is destroyed, and the global optimal solution of Basis Pursuit (sparse representation based on l1-norm) may be unequal to real sparse representation of signal. Thus a new method of multi-band radar signal fusion based on sparse Bayesian learning is proposed in this paper based on GTD model. This method avoids the step of the model order estimation, and overcomes the limitation of Basis Pursuit in multi-band signal fusion. The experimental results also show the advantage of this method.

Keywords: multi-band radar signal fusion　GTD model　sparse Bayesian learning　Basis Pursuit

本文作者相关文章

▶ 叶钒
▶ 何峰
▶ 朱炬波
▶ 梁甸农

PubMed

▶ Article by Ye, F.
▶ Article by He, F.
▶ Article by Zhu, J. B.
▶ Article by Liang, D. N.

通讯作者：

作者简介：

作者Email: yefen311@sina.com

参考文献：

本刊中的类似文章

文章评论

反馈人		邮箱地址	
反馈标题		验证码	0305