

基于GTD模型的多雷达信号二维融合

叶钊* 何峰^① 张永胜 董臻*

^①国防科学技术大学电子科学与工程学院 长沙 410073

Two-dimensional Fusion of Multi-radar Signals Based on GTD Model

Ye Fan He Feng^① Zhang Yong-sheng Dong Zhen*

^①School of Electronic Science and Technology, National University of Defense Technology, Changsha 410073, China

摘要	参考文献	相关文章
----	------	------

Download: PDF (343KB) [HTML](#) 1KB Export: BibTeX or EndNote (RIS) Supporting Info

摘要 多雷达信号2维融合是一种能显著提高成像分辨率和图像质量的参数化成像新方法。但是在宽带小角度观测的情况下，实际目标散射是随着频率的变化而变化，因此传统先插值后处理的融合方法就不再适用了。该文针对以上情况，提出了一种基于几何绕射模型的多雷达信号2维融合的方法，将多雷达信号2维融合问题转化为信号稀疏表示问题，并利用正则化的方法来估计散射模型参数。此方法不仅不需要2维解耦处理，而且通过信号稀疏表示方法可以准确地估计目标散射的频率依赖因子。仿真实验也表明该文方法有效性。

关键词： 多雷达2维信号融合 信号稀疏表示 几何绕射模型 2维解耦

Abstract: Two-dimensional fusion of multi-radar signals is a new parameterized imaging method. It can remarkably improve image resolution. In the case of wide bandwidth and small angle observation, scattering of target depends on frequency. Traditional fusion methods are inapplicability to this case. A new fusion method of multi-radar signals based on GTD model is proposed in this paper, and signal fusion is transformed into a signal sparse representation problem. Then regularization method is used to estimate parameters of scattering model. It dispenses with the step of two-dimensional decoupling, and estimates frequency-dependent factors of target scattering accurately by signal sparse representation. The experiments also show the validity of the method.

Keywords: Two-dimensional fusion of multi-radar signals Signal sparse representation GTD (Geometrical Theory of Diffraction) model Two-dimensional decoupling

Received 2010-03-24;

通讯作者: 叶钊 Email: yefan311@sina.com

引用本文:
叶钊, 何峰, 张永胜, 董臻. 基于GTD模型的多雷达信号二维融合[J] 电子与信息学报, 2011, V33(1): 55-59

Ye Fan, He Feng, Zhang Yong-Sheng, Dong Zhen. Two-dimensional Fusion of Multi-radar Signals Based on GTD Model[J], 2011, V33(1): 55-59

链接本文:

http://jeit.ie.ac.cn/CN/10.3724/SP.J.1146.2010.00278 或 http://jeit.ie.ac.cn/CN/Y2011/V33/I1/55

Service

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ Email Alert
- ▶ RSS

作者相关文章

- ▶ 叶钊
- ▶ 何峰
- ▶ 张永胜
- ▶ 董臻