

论文

利用多基线数据融合提高分布式卫星InSAR系统的干涉相位精度

张秋玲, 王岩飞

中国科学院电子学研究所 北京 100080

收稿日期 2005-3-9 修回日期 2005-8-4 网络版发布日期 2007-11-14 接受日期

摘要

分布式卫星干涉合成孔径雷达(InSAR)系统可以通过提供长基线来提高测高灵敏度,但长基线会给干涉相位展开带来困难。结合分布式卫星InSAR系统可以同时提供多个稳定基线的特点,该文提出利用多基线数据融合的方法来解决长基线给干涉相位展开带来的困难。文中采用了有效的数据融合方法——最大似然估计(ML)法,对多基线分布式卫星InSAR系统的干涉相位进行了估计。模拟结果表明,经过多基线数据融合的干涉相位展开精度要远远大于长基线干涉相位的直接展开精度。

关键词 [分布式卫星](#) [干涉合成孔径雷达\(InSAR\)](#) [多基线数据融合](#) [干涉相位](#)

分类号 [TN959.74](#)

Improving the Interferometric Phase Accuracy of Distributed Satellites InSAR System with Multibaseline Data Fusion

Zhang Qiu-ling, Wang Yan-fei

Institute of Electronics, Chinese Academy of Sciences, Beijing 100080, China

Abstract

Distributed satellites Interferometric Synthetic Aperture Radar (InSAR) can provide large baseline, by which the sensitivity to topography measure can be improved. But large baseline arises the difficulty in phase unwrapping procedures. Combined the characteristic of multibaseline of distributed satellites InSAR system, a method that utilizes the multibaseline data fusion is proposed to solve the problem of phase unwrapping brought by large baseline in this paper. Maximum likelihood (ML) method that is an effective two-baseline data fusion algorithm is adopted to estimate interferometric phase of distributed satellites InSAR system. The simulation results show that the phase unwrapping accuracy via multibaseline data fusion is higher than that of direct phase unwrapping of large baseline interferometric phase.

Key words [Distributed satellites](#) [Interferometric Synthetic Aperture Radar \(InSAR\)](#) [Multibaseline data fusion](#) [Interferometric phase](#)

DOI:

通讯作者

作者个人页 张秋玲; 王岩飞

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(446KB\)](#)

▶ [\[HTML全文\]\(OKB\)](#)

▶ [参考文献\[PDF\]](#)

▶ [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“分布式卫星”的相关文章](#)

▶ 本文作者相关文章

· [张秋玲](#)

· [王岩飞](#)