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## 研究论文

### 一种适用于机载双站SAR成像的运动补偿方法

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摘要:

在机载双站合成孔径雷达成像中, 载机的运动误差和双站几何构型信息的不准确均会引入额外的相位误差, 该相位误差将导致双站合成孔径雷达图像的聚焦质量显著下降. 针对一站固定构型的机载双站合成孔径雷达成像, 重点分析了几何构型偏差对成像的影响, 提出了一种适用的运动补偿方法. 该方法利用多普勒调频率估计, 同时补偿由运动误差和几何构型偏差所引入的相位误差, 从而较为有效地改善了双站合成孔径雷达图像的聚焦质量.

关键词: 双站合成孔径雷达(BiSAR) 一站固定构型 几何构型偏差 运动补偿

### Motion compensation approach for airborne bistatic SAR imaging

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Abstract:

In airborne bistatic synthetic aperture radar (BiSAR) imaging, not only the motion error of the airborne platform, but also the inaccuracy of data acquisition geometry will introduce an additional phase error that seriously degrades the focusing quality of the final image. For one-stationary BiSAR imaging, the influence of the inaccurate geometry is analyzed in detail and an applicable motion compensation approach is proposed. By using Doppler rates estimation, the phase error both from the motion error and the inaccurate geometry is appropriately compensated so that the focusing quality of the final image is consequently improved. Analyses of acquired raw data are presented to verify the proposal.

Keywords: bistatic synthetic aperture radar (BiSAR) one-stationary configuration inaccuracy of data acquisition geometry motion compensation

收稿日期 2012-01-08 修回日期 网络版发布日期

DOI: 10.3969/j.issn.1001-2400.2013.03.010

基金项目:

国家自然科学基金资助项目(61201284,61001211);航空基金资助项目(20110181004)

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