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毫米波三基线InSAR系统误差校正和信号分析

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Millimeter Wave Three Baseline InSAR System Error Correction and Signal Analysis

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摘要 该文研究了毫米波三基线InSAR系统误差校正问题，给出了系统误差校正方案，以实现三通道信号间的幅相一致性。分析了脉冲压缩处理的效果、通道间的干扰影响、系统相位稳定性、慢时间频谱、幅相一致性程度。给出了三基线干涉测角去模糊的方法以及地面测试实验方案。地面实测数据的处理和分析结果，验证了该文方法的有效性，并检验了该毫米波三基线InSAR的系统性能。

关键词： InSAR 误差校正 信号分析 干涉测角 毫米波雷达

Abstract： This paper focuses on the system error correction of a millimeter-wave three-baseline InSAR. The system error correction scheme is presented, in order to achieve the signal amplitude and phase consistency between three channels. The effect of pulse compression, the impact of interference between channels, system phase stability, the slow time spectrum, amplitude and phase consistency level are analyzed. The unambiguous interferometric angle method based on three-baseline and the experiment on ground is presented. The effectiveness of the method proposed and the validity of the performance of millimeter-wave three-baseline InSAR are indicated by real data results.

Keywords： InSAR Error correction Signal analysis Interferometric angle Millimeter wave radar

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