

论文

基于时域去走动的SAR大斜视CS成像算法

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摘要

该文针对大斜视SAR回波信号的大距离走动、小距离弯曲的特点,提出了一种将时域去走动和CS算法相结合的成像算法。首先在时域校正距离走动,然后在频域校正距离弯曲,最后通过几何校正完成目标成像。经过时域去走动处理后,距离向和方位向的耦合大大降低,不仅可适应大斜视角的成像要求,而且测绘带宽度也会增大。仿真结果表明,改进后的算法可满足大斜视角和较大测绘带宽度的成像要求。

关键词 [合成孔径雷达\(SAR\)](#) [去距离走动](#) [大斜视角](#) [CS成像算法](#)

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Chirp Scaling Imaging Algorithm of SAR in High Squint Mode Based on Range Walk Removal

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Abstract

SAR echo signal in high squint mode features large range walk and small range curvature. An improved CS imaging algorithm based on range-walk removal is proposed. First, range-walk is removed in time domain. Second, range curvature is corrected in frequency domain. Finally, geometry correction is used to correct geometric distortion. The coupling between azimuth and range is greatly reduced after range-walk removal. Therefore, it satisfies the imaging quality of SAR in high squint mode and the width of the scene swath is broadened as well. Simulation results illustrate that it satisfies the imaging quality of SAR in high squint mode and large scene swath.

Key words [Synthetic Aperture Radar\(SAR\)](#) [Range-walk removal](#) [High squint](#) [Chirp Scaling\(CS\) imaging algorithm](#)

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