

论文

基于Range-Doppler域相位补偿的ATI/DPCA数据配准方法

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摘要

合成孔径雷达通过沿航迹干涉(ATI)或天线相位中心偏置(DPCA)技术检测地面运动目标,需要对获得的不同通道数据进行方位向时间配准。该文首先根据测得的雷达参数进行粗配准,而后基于接收数据在Range-Doppler域内通过相位补偿思想精确估计两通道回波数据时间延迟,从而进一步提高数据配准精度。该方法无需插值操作,运算量小,仿真表明性能良好,可以满足实时配准要求。

关键词 [图像配准](#) [相位补偿](#) [方位向时间延迟](#)

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Data Co-registration via Phase Compensation in Range-Doppler Domain for ATI/DPCA System

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Abstract

Along-Track Interferometry (ATI) or Displaced Phase Centre Antenna (DPCA) technique can be applied to detect ground moving targets for airborne and space-based radars. As the first step of data processing, co-registration of the data received from different channels is necessary. In this paper, a new algorithm of data co-registration is proposed. Firstly, the received data is co-registered coarsely according to radar parameters measured primarily. Then in order to improve the co-registration accuracy further, time lag is estimated precisely via phase compensation idea based on the received data in range-Doppler domain. This algorithm does not require interpolation operation, therefore reducing the processing burden. The simulation results demonstrate that this algorithm can meet the real-time co-registration requirement.

Key words [Image co-registration](#) [Phase compensation](#) [Time lag](#)

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