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论文

合成孔径雷达简缩极化干涉数据的植被高度反演技术研究

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Investigation on Vegetation Height Retrieval Technique with Compact PolInSAR Data

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摘要 该文提出了一种利用合成孔径雷达简缩极化干涉数据进行植被高度反演的三阶段方法。将全极化干涉数据处理中的相干最优方法引入简缩极化干涉数据处理，由相位最优相干系数对应的最优相位获得体去相干系数和地表相位的初始估计，利用相干区域边界提取方法更新体去相干系数，得到精确的植被高度估计值。采用欧空局提供的L波段的模拟全极化干涉数据构造简缩极化数据集，将该数据用于植被反演，反演结果验证了提出方法的有效性。

关键词： 简缩极化干涉SAR 植被高度反演 三阶段 简缩极化干涉相干最优 相干区域边界提取

Abstract： A three-stage vegetation height inversion method with compact polarimetric SAR interferometric data is proposed. The coherence optimization method applied to full PolInSAR data processing is introduced into compact PolInSAR processing. The optimum phase is used to get the initial estimation of volume decorrelation and ground phase. Volume decorrelation estimation is updated with coherence boundary extraction method. Simulated L-band full PolInSAR data provided by ESA is used to construct compact PolInSAR data, and the generated data is used for vegetation height inversion. Inversion results confirm the validity of the proposed method.

Keywords： Compact polarimetric SAR interferometry Vegetation height retrieval Three-stage Compact PolInSAR coherence optimization Coherence region boundary extraction

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