

数据库、信号与信息处理

基于二维短时傅里叶变换的干涉相位图滤波方法

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摘要 提出了一种基于二维短时傅里叶变换的干涉相位图滤波方法。首先, 将干涉相位数据转变成指数, 利用二维短时傅里叶变换进行处理, 设置阈值, 并进行二维短时傅里叶逆变换; 最后, 求取复数相位, 获得滤波后干涉相位。试验结果表明, 该方法在有效抑制相干斑的同时, 还能有效地保持相位的细节信息和条纹的边缘结构, 而且清除了残余点, 有利于提高干涉测量的精度。

关键词 [二维短时傅里叶变换](#) [干涉合成孔径雷达](#) [干涉相位图](#) [滤波](#)

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InSAR interferogram filtering based on two-dimensional windowed fourier transform

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Abstract

An interferometric phase noise reduction algorithm based on two-dimensional windowed fourier transform (WFT) is proposed. Firstly, the interferogram phases are transformed into an exponential field, the exponential data are processed by WFT, a threshold is selected to reduce noise, and the filtered exponential data are obtained by inverse WFT (IWFT). Finally, the filtered wrapped phases are computed by filtered exponential data. The result shows that the new method is powerful to interferogram speckle noise suppression, and residues are removed, as well as it can be preserved fine phase details and fringes' structures. The proposed method can improve the accuracy of interferometric products.

Key words [two-dimensional windowed fourier transform](#) [InSAR](#) [interferogram](#) [filtering](#)

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