

图形、图像、模式识别

在多尺度Contourlet域中的SAR图像正则化超分辨

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摘要 针对SAR图像超分辨重构问题, 建立了基于多尺度Contourlet域的正则化模型。在选取正则化参数时, 提出一种自适应确定方法, 该方法无需知道噪声大小和图像的先验知识, 提高了确定正则化参数的准确性; 求解模型时用FR共轭梯度法来改善算法的收敛性。将该算法分别与空域中正则化算法和小波域中正则化算法进行了比较, 仿真实验结果表明, 该算法较好地再现了各种边缘信息, 其重构结果均优于其他两种方法。

关键词 [超分辨重构](#) [SAR图像](#) [正则化](#) [Contourlet变换](#)

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Regularied SAR image super-resolution reconstruction based on multi-scale Contourlet-domain

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Abstract

Aiming at the reconstruction of SAR image super-resolution, a regularization model based on multi-scale contourlet-domain is established. When choosing the regularization parameter, an adaptive method is proposed which needn't the noise and prior information of image, and enhances the veracity of the regularization parameter. The algorithm's convergence is improved by FR conjugate gradient method. Compared with regularization algorithm in spatial domain and wavelet domain, computer simulations show that the proposed approach in this paper can properly retrieve the main information of original image and is superior to the other two methods.

Key words [super-resolution reconstruction](#) [SAR image](#) [regularization](#) [Contourlet transformation](#)

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