



基于特征提取的SAR图像滤波算法

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摘要：

针对SAR图像所包含的地物目标比较复杂的特点，以及滤波平滑效果好和边缘纹理细节信息损失少不能兼得的缺点，该文提出一种新的SAR图像滤波算法。该算法利用Contourlet变换能保持边界，结合特征提取可以获得区域目标点特征的特点，利用自适应阈值的方法对SAR图像进行滤波。与典型的Lee滤波和保持边缘特征的滤波算法进行比较，实验表明新的算法不仅提高了图像的质量，其量化指标也得到了提高。作为本文算法的应用，利用变换域内低频图像和子带图像的融合规则对L和C两个波段的SAR图像进行去噪融合，可以看出该算法的去噪效果。

关键词：Contourlet变换；特征提取；融合；滤波

A filtering algorithm of SAR image based on feature extraction

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Abstract:

By reason of complexity of objects of SAR image, in order to get better filtering results and keep texture and detail informations, it puts forward a new filtering method. This method utilizes Contourlet transformation together with feature extraction, which can get point feature of areas. Using of auto-adapting threshold filters SAR image. The experimental results show that the results using our methods are better than that of using the other methods such as Lee and keeping edge filters. It materialize that not only the good vision of image were gotten but the quality indices were great improvement. As a practical application, SAR images of two wave bands, L and C, were denoised and fused. And it have got preferable result.

Keywords: Contourlet transform; Feature extraction; Fuse; Filter.

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