



Despeckling SAR Images using Complex Wavelet Transform

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Abstract: The presence of multiplicative speckle noises caused by the interference of backscattered coherent waves make the computer aided image processing and interpretation a difficult task. This speckle noise filtering is very much important for improving suitable conditions of post processing of images. This report covers the information regarding the nature of the speckle, its causes and possible methods to reduce them. In this work, speckle removal filters such as Lee filter, Gamma MAP filter, Spatially Adaptive MAP filter and Bivariate Cauchy MAP Estimation are discussed. Each filter is different from the other and removes speckle noise from SAR images using suitable algorithms. Images are filtered by using these filters and their results are formulated in terms of statistical parameter like PSNR, MSE and ENL for the image quality assessment.

Keywords: Complex wavelet transform, Gamma MAP filter, spatially adaptive MAP filter, Speckle Denoising

