Analysis of Intensity SAR Images Despeckling Techniques with Two New Methods Based On Stochastic Distances

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Abstract—The search for new methods to denoise images while maintaining the original resolution, structures and details is a constant task in the image processing field. The additive white Gaussian noise (AWGN) is the most studied, but it is not the only one which interferes in the analysis and interpretation of images. The speckle, a multiplicative noise, present in synthetic aperture radar (SAR) images, is an example of noise that can not be removed by an AWGN filter. Therefore, some researchers have been working to expand an AWGN filter to deal with multiplicative noise. This paper 1 discusses and compares two new methods based on non-local means filter (NLM) and the stochastic distances with other filters proposed in the literature. The first method takes into account the speckle and backscatter to estimate the parameters necessary to compute the stochastic distances on NLM. The second method uses the inverse Gamma distribution which facilitates the parameters estimation.

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