Block Based Compressive Sensing for SAR Images by using Noiselet and Haar Wavelet

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Compressive sensing (CS) is a new method for image sampling in contrast with well known Nyquist sampling theorem. Sampling domain and sparse domain play important rule for perfect signal recovery in CS framework. In this paper, the performance of four recovery algorithms are compared according to visual evaluation and an image assessment parameter where noiselet and Gaussian used as the sampling domain and Fourier transform (FT), discrete Cosine transform (DCT) and Haar wavelet transform (WT) used as the sparse domain. Furthermore, for synthetic aperture radar (SAR) images, using noiselet and Gaussian are also evaluated. Due to the big size of SAR images and high computational expenses, the block-based adaptive sampling based on edge detection is used.

Compressive sensing (CS), synthetic aperture radar (SAR), Noiselets, Haar wavelet, blockbased adaptive sampling

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