Reviewer’s report

Title: Nonlocal Total Variation Based on Symmetric Kullback-Leibler Divergence for the Ultrasound Image Despeckling

Version: 0 Date: 21 Jul 2017

Reviewer: Nelson Mascarenhas

Reviewer's report:

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The manuscript presents a Non-Local Total Variation filter for speckle noise in ultrasound images. It uses the Gamma Distribution and derives a stochastic distance for it.

The most usual model for log-compressed ultrasound images is the Fisher-Tippett distribution, not the Gamma distribution. If the authors had included the Fisher-Tippett in their non-parametric test, it would probably have surpassed the other distributions.

The authors also derive the Kullback-Leibler stochastic distance for the Gamma distribution, but this has already been derived before by A.C. Frery and his colleagues in the case of multipolarized SAR for Kullback-Leibler, Rényi, Bhattacharyya, Hellinger and Chi-Square distances (for the Wishart Distribution, which has the Gamma as a particular case for one polarization - see JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATIONS AND REMOTE SENSING, VOL. 6, NO. 3, JUNE 2013 or Chilean Journal of Statistics, Vol. 2, No. 2, September 2011, 81-100).

Given these restrictions, the paper is well written and well organized and deserves to be published.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?  
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?  
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

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