$$\hat{\Sigma} = \frac{1}{N}\sum_{i=1}^{N} Z_i$$

$$S = \begin{bmatrix} S_{HH} & S_{HV} \\ S_{VH} & S_{VV} \end{bmatrix}$$

$$H(X) = -\sum_{i=1}^{k} p_i \log_k p_i$$

$$I(\theta) = -E\left[\frac{\partial^2}{\partial\theta^2}\log f(X;\theta)|\theta\right]$$

$$D_\varphi^h(X,Y) = h\left(\int_A \varphi\left(\frac{f_X(Z;\theta_1)}{f_Y(Z;\theta_2)}\right) f_Y(Z;\theta_2)\, dZ\right)$$

Call for Papers

Advanced Statistical Techniques in SAR Image Processing and Analysis

Techniques derived from Information Theory, Information Geometry and Robust Inference have become an essential tool for image processing and analysis. In particular, these techniques can be used to tackle diverse and challenging problems in mono-polarized (amplitude and intensity) and full-polarimetric SAR (PolSAR) images (viz. feature extraction, parameter estimation, image classification, image segmentation, edge and change detection, noise reduction, polarization rotation correction).

The elegant new techniques and the results that stem from the use of advanced statistical methods for SAR data are few and unfortunately scattered in the literature of Pattern Recognition, Mathematical Statistics and Signal Processing. This fragmentation does not promote a unified view of this emerging field of research and, thus, many find it difficult to embrace a comprehensive body of theory and results. This **Special Stream** aims at filling such gap with a selection of contributions that share a common viewpoint.

Topics

The objective of the Special Issue, open to all researchers, is to select outstanding contributions on recent advances in the field of advanced statistical techniques applied to synthetic aperture radar, bringing together participants from the research, academic and industrial communities.

Contributions on topics of primary interest are expected. These include:

- Statistical techniques in SAR/PolSAR analysis,
- Statistical techniques for SAR/PolSAR image processing,
- Target decompositions theorems for PolSAR data,
- SAR/PolSAR image classification and regression,
- SAR/PolSAR image denoising,
- Edge detection for SAR/PolSAR data,
- Techniques for evaluating and improving despeckling filters,
- Target recognition,
- Techniques for change detection.

Submission Guidelines

This special issue solicits original work that is not under consideration for publication in other venues. Authors must refer to the IEEE Geoscience and Remote Sensing Letters authors' guide at http://ieeeauthorcenter.ieee.org/ for information on content and formatting of submissions.

The direct link to the Manuscript Central for the submission of papers is https://mc.manuscriptcentral.com/grsl. In the Manuscript type drop-down menu box, the author must choose Special Section on "*Advanced Statistical Techniques in SAR Image Processing and Analysis*".

Important Dates

- Submission open: 1 April 2018
- Submission close: 31 July 2018

Datasets

We will provide to the interested participants a full-polarimetric UAVSAR L-band data to assess the proposed approaches, enhancing the reproducibility of their contributions. Authors will be free to use it or not, in the way they find it most suitable.

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