



**CALL FOR PAPERS**  
**IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**  
**Special Issue on**  
**“Mathematical Morphology in Geoscience and Remote Sensing Applications”**

The use of mathematical morphology eliminates the need for computationally expensive machine learning and deep learning algorithms in many cases. However, this instance becomes possible only with the advanced research on understanding the morphological operations in the context of remote sensing and geoscience. In general, morphological operations are simple transformations that can be applied for binary or grayscale images. It is applied to the shapes and structures inside the images captured from the remote sensing applications in more specific cases. Depending on the input operation and the size of the structuring element, we can easily adjust the output image. These transformations are very powerful when dealing with remote sensing data and try to solve a problem with improved accuracy and performance measures without diving into expensive advanced techniques. Though these techniques may look so simply, they tend to be highly useful for preprocessing remote sensing data. Furthermore, such preprocessed data will significantly provide more powerful computer vision solutions, especially with the development of spatial algorithms for geo-pattern analysis, retrieval, reasoning, modelling, and visualization.

This special issue intends to bring out the significance and application of mathematical morphology in geoscience and remote sensing. We welcome high-quality research contributions that fall under this background.

The broad topics include (but are not limited to):

- Advances in morphological neural networks
- Hyperspectral image analysis with mathematical morphology
- Mathematical morphology for feature-based classification and clustering
- Filtering and segmentation of remote sensed data using mathematical morphology
- Stereoscopic image superposition using mathematical morphology
- Innovations in stochastic geometry for mathematical morphology
- Role of mathematical morphology in processing and analysis of digital elevation models
- Geoscience and information mining with mathematical morphology
- Simulation and visualization of remote sensing data using mathematical morphology
- Role of mathematical morphology in color space

**Schedule**

Dec. 1, 2022: Submission system opening

May. 31, 2023: Submission system closing

**Format**

All submissions will be peer reviewed according to the IEEE Geoscience and Remote Sensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on <http://mc.manuscriptcentral.com/jstars>, using the Manuscript Central interface and select the “**Mathematical Morphology in Geoscience and Remote Sensing Applications**” special issue manuscript type. Prospective authors should consult the site <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&number=9082768> for guidelines and information on paper submission.

All submissions must be formatted using the IEEE standard format (double column, single spaced). Please visit [http://www.ieee.org/publications\\_standards/publications/authors/author\\_templates.html](http://www.ieee.org/publications_standards/publications/authors/author_templates.html) to download a template for transactions. Please note that as of Jan. 1, 2020, IEEE J-STARS has become a fully open-access journal charging a flat publication fee \$1,250 per paper.

**Guest Editors**

Jia-Bao Liu Anhui Jianzhu University, China ([liujiabao@ieee.org](mailto:liujiabao@ieee.org))

Muhammad Javaid University of Management and Technology, Pakistan, ([muhammad.javaid@umt.edu.pk](mailto:muhammad.javaid@umt.edu.pk))

Mohammad Reza Farahani Iran University of Science and Technology, Iran ([mrfarahani88@gmail.com](mailto:mrfarahani88@gmail.com))

H. Jafari University of South Africa, South Africa, ([jafarh@unisa.ac.za](mailto:jafarh@unisa.ac.za))

Shui Yu University of Technology Sydney, Australia ([shui.yu@uts.edu.au](mailto:shui.yu@uts.edu.au))