



CALL FOR PAPERS

IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing Special Issue on

“Geology-1 Hyperspectral Satellite: Innovative Methods and Applications”

With the successful launch of Geology-1 on May 17, 2025, a new member joins the hyperspectral family. Geology-1 is China's first hyperspectral microsatellite for geological resources and environment. Weighing just 83 kg, its design is compact, integrated, and has 26 spectral bands (410–2480 nm). Geology-1 uses Visible-to-Near Infrared (VNIR) and Shortwave Infrared (SWIR) sensors to capture detailed geological data. The VNIR sensor (14m resolution, 16 bands) targets elements like water, vegetation, and soil, while the SWIR sensor (30m resolution, 10 bands) focuses on minerals, lithology, pollution, and so on. Recently, the initial set of images of Geology-1 was released on its official website (<http://geosat.com.cn/>) to the public, encouraging researchers to download Geology-1 satellite remote sensing data and explore the potential of diverse spectral bands of Geology-1. Researchers can apply the data of Geology-1 from the website.

This special issue seeks representative, high-level contributions in relevance with innovative methods, techniques and their multitude of applications in various industries of the Geology-1 satellite. Submissions are welcome on theoretical development, intelligent model design, efficient processing systems and practical applications.

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

- Pre-processing methods for Geology-1's remote sensing images
- Advanced methods for improving the data quality of Geology-1's remote sensing images
- Task-oriented, high-quality datasets based on Geology-1's remote sensing images
- AI-based intelligent processing methods for Geology-1's remote sensing images
- Innovative applications in diverse industries (e.g., mineral exploration, precision agriculture)
- Efficient systems to support AI/ML/DL-based Geology-1's remote sensing data processing

Schedule

January 1, 2026, Submission system opening

August 31, 2026, 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 “**Geology-1 Hyperspectral Satellite: Innovative Methods and Applications**” special issue manuscript type. Prospective authors should consult the site <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=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 to download a template for transactions. Please note that since Jan. 1, 2025, IEEE J-STARS, as a fully open-access journal, is charging a flat publication fee of \$1,800 per paper.

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