CALL FOR PAPERS

IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
Special Issue on "Multimodal Reasoning Models in Remote Sensing"

Recently, OpenAI-o1, DeepSeek-R1 style large language models (LLMs) show strong reasoning capability, called Reasoning Language Models (RLMs). With RLMs, we shape intelligence ability to multi-step logical reasoning, make decisions, and generalize across domains. This special issue seeks to explore the emerging field of Multimodal Reasoning Models (MRMs) in remote sensing. RLM emerged as a promising paradigm to integrate multi-modalities such as text, remote sensing images, remote sensing video, and 3D lidar, to support complex reasoning capabilities. Thus, RLM-empowers RS intelligence models evolved from perception-driven pipelines to an unified, language-centric frameworks which provide groundbreaking cross-modal understanding of remote sensing data.

The broad topics include (but are not limited to):
- Multimodal reasoning models in remote sensing
- Omin-modal reasoning models in remote sensing
- Chain-of-Thought dataset construction for remote sensing reasoning tasks
- Reinforcement learning for alignment and decision-making in MRMs
- Benchmark and evaluation frameworks for MRMs
- Reasoning-driven few-/zero-shot learning in remote sensing
- Reasoning-based remote sensing image generation and retrieval
- Reasoning-driven visual question generation and answering for remote sensing data
- Remote sensing image/video captioning with reasoning
- Remote sensing visual grounding (localization or segmentation)
- Geo-Localization of remote sensing images with MRMs
- MRM-empower AI Agent for remote sensing data
- Agentic AI for remote sensing applications
- Applications for MRMs for remote sensing data

Schedule
Nov. 1st, 2025, Submission system opening
April 30th, 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 "**Multimodal Reasoning Models in Remote Sensing**" 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, 2024, IEEE J-STARS, as a fully open-access journal, is charging a flat publication fee $1,800 per paper.

Guest Editors

Haifeng Li   Central South University, China (lihaifeng@csu.edu.cn)
Hanwen Yu   University of Electronic Science and Technology of China, China (yuhanwenxd@gmail.com)
Lefei Zhang   Wuhan University, China (zhanglefei@whu.edu.cn)
Zhitong Xiong   Technical University of Munich, Germany (zhitong.xiong@tum.de)
Xiang Li   University of Reading, United Kingdom (xiangli92@ieee.org)