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

Special Issue on
“Monitoring of Urban Infrastructure Stability with Radar Interferometry from Space to Ground”

Urban infrastructure plays a crucial role in supporting the daily operations of a city. However, the aging of urban infrastructure may result in deformations. This issue is especially pronounced in rapidly urbanizing and renewing cities, where detecting and monitoring infrastructure stability is critical to sustainable urban development. Interferometric Synthetic Aperture Radar (InSAR) is particularly effective in identifying wide-coverage ground deformation from space, and it has been extensively applied in monitoring ground deformation across various scenarios.

In recent years, the development of low-cost, miniaturized, and lighter InSAR technology and systems is trending, with a growing number of ground and mobile platforms, such as unmanned aerial vehicle (UAV)-borne and car-based SAR systems. This special issue is dedicated to exploring frontier research on the advanced interferometric SAR techniques across different platforms, especially on joint utilization of multiple systems from space to ground (e.g., multiple InSAR platforms, spaceborne and airborne/UAV-borne InSAR, and spaceborne and ground-based InSAR), to comprehensively monitor the stability of urban infrastructure. This special issue will be an invaluable resource for academics and professionals and enrich the existing knowledge by offering solutions for the practical application of InSAR in monitoring urban infrastructure stability. The broad topics include (but are not limited to):

- Join utilization of data from multiple InSAR Platforms.
- Join utilization of spaceborne, airborne/UAV-borne, and ground-based radar interferometry data.
- Innovations in spaceborne, UAV-borne, and ground-based radar interferometry algorithms.
- System design and multiple sensors integration for UAV-borne and moving platform SAR.
- Integration of multi-source data for urban infrastructure monitoring and analysis.
- Machine learning and AI for data processing, interpretation, and prediction.
- Long-term monitoring in an urban environment with integrated data.
- Applications in the monitoring of urban infrastructures, i.e., buildings, dams, transportation facilities, etc.
- Urban infrastructure mapping and assessment with SAR, InSAR, and PolSAR data.
- Other topics related to urban infrastructure stability with remote sensing technology.

Schedule

01-Dec-2024 ---- Submission system opening

31-Aug-2025 ---- 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 “**Monitoring of Urban Infrastructure Stability with Radar Interferometry from Space to Ground**” 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 \$1,496 per paper.

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