

Special Issue

Advanced InSAR for High-Resolution Topography and Deformation Monitoring: Methods, Multi-Source Data Fusion, and Applications

Message from the Guest Editors

Interferometric Synthetic Aperture Radar (InSAR) has become a core Earth observation technique for high-resolution topographic reconstruction and surface deformation monitoring. Artificial intelligence and multi-source data fusion have significantly improved the accuracy, efficiency, and robustness of InSAR processing in complex terrain, urban areas, and geohazard-prone zones. These advances make InSAR indispensable for disaster prevention, infrastructure safety, urban management, and global environmental change research. This Special Issue is aiming to showcase the latest research progress, technical innovations, and practical applications of InSAR in high-resolution topographic reconstruction and deformation monitoring. Suitable topics include but are not limited to: advanced InSAR algorithms for high-resolution topographic mapping; formation-flying SAR data processing and applications; high-precision deformation monitoring using multi-temporal InSAR; AI-enhanced InSAR interpretation; multi-source data fusion; validation of InSAR products with in-situ measurements; and operational applications in geohazards, urban infrastructure, and large-scale environmental monitoring.

Guest Editors

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Message from the Editor-in-Chief

Remote Sensing is now a prominent international journal of repute in the world of remote sensing and spatial sciences, as a pioneer and pathfinder in open access format. It has highly accomplished global remote sensing scientists on the editorial board and a dedicated team of associate editors. The journal emphasizes quality and novelty and has a rigorous peer-review process. It is now one of the top remote sensing journals with a significant Impact Factor, and a goal to become the best journal in remote sensing in the coming years. I strongly recommend *Remote Sensing* for your best research publications for a fast dissemination of your research.

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