

Special Issue

Advances in Synthetic Aperture Radar (SAR) Imaging and Time-Varying Scattering Target Interaction: Innovation, Theory, and Applications

Message from the Guest Editors

Synthetic Aperture Radar (SAR), as the core remote sensing technology for Earth observation, has superior imaging capabilities based on the fundamental assumption of "static observation scene". However, a new category of targets with time-varying scattering characteristics—such as time-varying metasurface and mechanically adjustable targets—is challenging this theoretical foundation. These targets exert a dual impact on SAR remote sensing. On one hand, this phenomenon severely disrupts traditional SAR imaging mechanisms, leading to image distortions including defocusing, ghosting, and even target annihilation. These issues directly degrade the geometric and radiometric accuracy of SAR image targets, posing significant challenges to subsequent target feature extraction and interpretation. On the other hand, it has also given rise to unprecedented remote sensing applications. This Special Issue aims to deeply explore the impact and insights of time-varying scattering targets characteristics on SAR imaging from the perspective of remote sensing and information extraction.

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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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