

Special Issue

Exploring the Urban Heat Island and Its Mechanisms Based on Satellite and AI

Message from the Guest Editors

Urban Heat Island (UHI) effects, i.e., where urban areas experience significantly higher temperatures than their rural surroundings, pose serious challenges to public health, energy consumption, and urban sustainability. With rapid urbanization and climate change intensifying these effects, understanding the spatial and temporal dynamics of UHI has become a critical research priority. Remote sensing technologies, particularly satellite-based observations, offer powerful tools for monitoring land surface temperatures, vegetation cover, and urban morphology. Meanwhile, artificial intelligence (AI) and machine learning techniques are revolutionizing the analysis of complex geospatial data, enabling the more accurate modeling and prediction of UHI phenomena. This Special Issue aims to collate cutting-edge research that leverages satellite remote sensing and AI to explore the mechanisms, impacts, and mitigation strategies of Urban Heat Islands. It aligns closely with the scope of *Remote Sensing*, emphasizing the integration of advanced Earth observation technologies with intelligent data analytics to address pressing environmental and urban challenges.

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About the Journal

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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