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Remote Sensing and GIS Applications in Urban Climate Research

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Deadline for manuscript submissions:
closed (30 March 2022)

Message from the Guest Editors

Associated with the use of construction and building materials, urbanization processes modify the surface energy balance, hydrological cycle, and natural ecosystems, which have led to significant impacts on the local and regional climate. These changes have constituted serious climate challenges for urban areas that require both new analytic approaches and new sources of data and information.

The aim of this Special Issue is to present original research articles and review work related to remote sensing and GIS applications in urban climate research. In this Special Issue, we seek original work focused on using innovative remote sensing and GIS methods to address urban climate issues. Topics include but are not limited to:

1. Spatiotemporal analysis of urban climate;
2. Long-term trend of urban climate change;
3. Urbanization effects on local, regional, and global climate change;
4. Urban landscape and climate;
5. Urban ecosystems and climate;
6. The urban heat island effect;
7. Urban energy use; and
8. Urban water resources and water use.

We are especially interested in research using remote sensing big data computing and machine learning approaches to address urban climate issues.

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Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

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