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Urban Climatic Suitability Design and Risk Management

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As a result of rapid urbanization, increasing population size, and complex human behavior, the urban climate is increasingly deteriorating. In particular, urban infrastructure style and the features of nature and humanity make the urban climate a unique entity with distinct spatio-temporal characteristics. A series of environmental and energy risks associated with the urban climate are continually being identified. The excessive utilization of air conditioning and large amounts of anthropogenic heat emissions have led to prominent high-temperature thermal safety issues, increased building energy consumption, and associated carbon emissions. Understanding the formation mechanisms and control strategies of the urban climate is an important foundation for constructing climate-resilient cities. This Special Issue aims to explore a series of urban climate-related measurements, simulations, and models, as well as newly proposed advanced techniques. Cross-disciplinary research topics covered in this Special Issue include multi-scale urban climate analysis, human thermal comfort discussions, simulations of urban thermal environment, application of green building design, etc. This Special Issue seeks to promote the construction of a research-oriented urban climate change operational system, strengthen monitoring, impact assessment, and risk assessment, improve climate change adaptation and carbon emission assessments, and enhance the climate resilience and security of cities.



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