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Sommario/riassunto

This reprint focuses on the theoretical principles and practical adoption of remote sensing approaches and datasets in understanding the nexus between urbanization, natural landscapes, urban micro-climate, climate change and Urban Heat Islands. Urbanization, characterized by natural landscape transformation, influences thermodynamics, surface energy and micro- and macro climate perturbations. These changes result in environmental deterioration that in turn adversely affects bio-physical processes and quality of urban life. A major consequence of urbanization is the Urban Heat Island (UHI). It is anticipated that the increased UHIs, in concert with the increasing anthropogenic activities, will further increase the vulnerability of urban landscapes to climate-related disasters such as floods and heatwaves. Recent advances in optical and thermal remotely sensed datasets offer great potential in understanding the relationship between urban bio-physical characteristics and UHIs. Hence, this reprint provides a basis for understanding urban ecological and thermal patterns, which is critical for the management of urban physical, ecological and social processes within a remotely sensed data framework. This reprint should be of interest to both specialists and generalists interested in, among other fields, urban planning, ecological conservation, the urban micro-climate, and climate change.