

Land Use Change Analysis for Evaluation of Urban Heat Environment

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The urban heat environment is getting worse for many cities in Japan. The heat energy within an urban area is caused by many factors, such as land use change, energy consumption within a city, materials of surface and complexity of urban structure. In this study, the land use is focused to evaluate the urban heat environment. The temperature changes between morning time and evening time for a city is considered to be affected by the vegetation cover in the region. The degree of the temperature change is correlated with the vegetation/water/building cover ratio. The land use change of some cities such as Tokyo and Osaka, the biggest cities in Japan are analyzed by using time series satellite data and GIS datasets, and the heat balance change caused by the land use change is evaluated by modeling the urban heat environment.