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Surface Heat Island Characteristics of Erzurum, Northeast Turkey

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The urban heat island can be studied from the air temperatures as well as the surface temperatures. Cities are generally known as warm areas according to their surroundings, but the relative temperature conditions according to the environments of the cities depend on the difference between the energy balance characteristics of the land coverings in their surroundings. Urban heat island studies in Turkey showed that, some cities are colder at daytime and hotter than at night environment, some cities are warmer than their surroundings both day and night, while some cities were found to be at the same temperature is warm night, according to the hot daytime environment. These conditions also change seasonally. In this study, northeastern Turkey, quite a high altitude, covered with high mountainous areas in and surrounding depression, Asian high pressure impact surface in Erzurum remaining heat island features during the winter months were studied. Landsat and Aster satellite images were used in the study. The NDVI and NDBI indices were constructed and examined how surface temperatures on different land covers change day and night.