

## عنوان مقاله:

Investigation of Urban Biophysical Compounds in the Formation of Thermal Islands Using RS and GIS (Case Study: Yazd)

## محل انتشار:

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## خلاصه مقاله:

The urban thermal island phenomenon has intensified in recent years due to the changes in urban airspace along with the rise of urbanization. Spatial-temporal patterns of biophysical constituents, which include vegetation, impermeable surfaces and soil type in the city, have a significant impact on urban thermal islands. The purpose of this study is to investigate the role of effective urban parameters in the formation and clustering of Yazd urban thermal islands. In order to achieve the proposed goal, the thermal map was developed using the single-window algorithm on the thermal band of OLT sensor of Landsat ETM+ sensors for August, 2015 and 2017; Land surface temperature (LST) was calculated and using spatial correlation (LISA), hot and cold clusters of thermal islands of Yazd were extracted. In order to evaluate the surface temperature, with the intensity of LST, spatial heterogeneity of the clusters increases nonlinearly. The relationship between the thermal islands with NDVI and urban carrion layers were investigated. Cold clusters are around the places with more green space and hot clusters are in the arid areas and in areas without vegetation cover. The result of the correlation between the surface temperature and the NDVI, NDBI, and NDBal indicated that the relationship between NDVI and LST is negative, and the relationship between NDBal and LST is also nonlinear and negative. But the relationship between NDBI and LST is nonlinear and positive. A spatial correlation with the local index has emphasized the extent of thermal islands in the studied periods

## کلمات کلیدی:

(Urban thermal islands, Ahwaz City, Local spatial correlation index (LISA

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