



## **Spatial and temporal variation of urban heat load in different local climate zones based on the long term temperature measurements in Szeged, Hungary**

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Understanding the modified urban climate environment is crucial because the continuously growing number of residents. The system of local climate zones developed by Stewart and Oke (2012) allows the objective comparison of the thermal characteristics in the different part of the city and between different cities. In 2014 a 24-element measurement network was deployed in order to represent the thermal characteristics of different local climate zones in Szeged. The almost 4-year database provide an unique opportunity to study the urban temperature modification since the network has high spatial ( $\sim 1$  station/2 km<sup>2</sup>) and temporal (1 min frequency) resolution. Based on these long term dataset the diurnal, seasonal and annual characteristics of air temperature in local climate zones can be evaluated under all and ideal weather conditions when the urban effect on the air temperature is the most emphasized. Normalized time steps are used based on the time of sunset and sunrise during data processing, that means the diurnal and nighttime periods were divided to twelve parts in each investigated periods. The results will help to understand the present local climate of urban areas moreover it will provide a basis for proper urban scale climate projections.