



## **Urban heat island analysis in Central Europe based on MODIS surface temperature measurements**

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One of the most often analyzed phenomena related to cities is the urban heat island (UHI) effect. The main aim of this poster is to analyze and compare the UHI effects of large cities located in Central Europe based on day-time and night-time surface temperature time series calculated from seven infrared spectral band measurements of sensor MODIS. Thus, UHI effect of large cities with more than 1 million inhabitants (Bucharest, Budapest, Warsaw, Prague, Vienna, Milan, Munich, Sofia, Belgrade, Zagreb), and the nine most populated cities in Hungary (Debrecen, Miskolc, Szeged, Pécs, Győr, Nyíregyháza, Kecskemét, Székesfehérvár, Szombathely) have been compared for the period 2001-2012. The results suggest that the UHI intensity detected in the selected Central European cities exhibits high variability. Monthly average values of the temperature differences between urban and rural areas range between 1 °C and 6 °C. The most intense UHI occurs in day-time in the summer period, while the least intense one occurs in the spring and autumn months. Annual variation of the monthly mean values is more pronounced in day-time than night-time. The central UHI region concentrates to the densely built-up area of the city, but especially in case of the larger cities, more than one single UHI center area can be detected. Our results may serve as a basic tool to take into account in general urban planning, which will be especially important in the coming decades due to global warming.