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Climatologically aspects of Bucharest's UHI in connection with synoptic scale atmospheric circulation patterns

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A ten years study of urban heat island in Bucharest-Romania is presented in order to emphasize Bucharest's urban climate major changes, since the green areas have been severely affected by the continuous extension of metropolitan area. The work is focused on investigation of synoptic-scale circulation pattern over South-Eastern Europe correlated with the Bucharest's urban heat island magnitude, as well as the impact of UHI on other meteorological fields (precipitation and wind). As working instruments COST733 threshold-based catalogues (GWT and WLKC733), and National Meteorological Administration's observational data during 2000 and 2010 were used. Analysis reveals that Bucharest's UHI normally can occur on every circulation type, but it develops high magnitudes under calm conditions and on dry anticyclonic circulation types, especially during the cold season.

Keywords: circulation patterns, UHI, Bucharest