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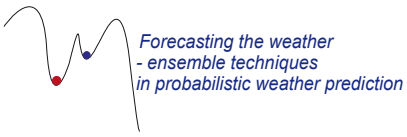

Influence of Air Circulations upon Bucharest's Urban Heat Island

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Urban areas are complex systems that polarize a large part of the world population, social and economical activity. Their continuous development requires careful monitoring in order to protect population and mitigate the eventual hazards and risks that can occur. That is why in the recent years, issues concerning the urban climate - such as urban heat-island effect and urban air pollution – have retained the attention of scientific community. By its geographical position, the city of Bucharest has a temperate climate, influenced mainly by the alternate or simultaneous influence of the western circulation, the East-European High, the Mediterranean Low, and the tropical air mass advections. All these influences made it highly vulnerable to natural hazards, like heavy rains or extreme temperatures. Moreover, in the past two decades Bucharest's urban climate has suffered changes, since the green areas have been severely affected by the continuous extension of metropolitan area. The present study investigates the influence of meteorological conditions in connection with air circulations upon the intensity of Bucharest's urban heat island, examining its variation characteristics during the last decade (2000-2010). The results have shown the strong relationship between urban heat island and air mass circulations and consequence the impact upon the weather in Bucharest.