

Interactive comment on “Development of an operational modelling system for urban heat islands: an application to Athens, Greece” by T. M. Giannaros et al.

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General comments:

The study presented by Giannaros et al. is of high scientific relevance. It follows an innovative concept using state-of-the-methods. It refers to the relevant literature, and is well presented, except from minor aspects described below.

Specific comments:

Best (2005), also cited in this manuscript, has already discussed the question of "Representing urban areas within operational numerical weather prediction models". The
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authors are asked to check again the correctness of their statement that "... modelling of the UHI has yet to be realised in the operational context..." (p4966, l17-18), e.g. by checking all references to that paper. In addition, the study presented here seems to be in a pre-operational status. Otherwise, the operational use should be mentioned. This would also offer the possibility to extend the study by using a longer time period.

The authors write "...there appear to be no significant differences in the modeling system's performance..." (p4974, l8-9). Has the significance been checked by statistical analysis? If not then the term 'significant' should be removed since this is a subjective assessment. Please check the entire manuscript for this kind of error.

The authors use two biometeorological indices (DI and AWBGT) in their study. Why had they chosen these particular indices? There are newer (and probably better) ones like the UTCI. The authors mention that heat stress conditions also depend on wind speed, but none of the chosen indices do consider wind speed. They do not mention one of the most important variables, i.e. the mean radiant temperature, at all. I would recommend to discuss this part more detailedly, also because NHES is a journal dedicated to natural hazards.

The authors conclude that "...The two thermal comfort indices are simulated adequately well...". What does adequate mean in this context? How is it determined?

Technical corrections:

In addition to the corrections already mentioned in the referee comment by D. Syrakov I ask the authors to consider the following points:

Please use K instead of °C for temperature differences (e.g. biases)

Equations (4) and (5) are not correct. All expressions need to have proper physical units. For instance, the term $(T_a - 14.5)$ is wrong since T_a is given in °C but 14.5 is dimensionless.

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