

Interactive comment on “Parametrisation of the variety of human behaviour related to building energy consumption in TEB (SURFEX v. 8.2)” by Robert Schoetter et al.

Anonymous Referee #3

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This paper describes a detailed parameterisation of the building energy demand as represented in urban canopy models such as TEB. The building energy demand model is coupled to TEB to predict the anthropogenic heat flux for Toulouse based on various levels of detail on building use and parameter values. I found the paper to be clearly written and has a number of important applications for studying urban climate and urban design. Although I believe that this paper should be published, there are some minor changes that may improve it.

Comments:

1) I think some clarification on how ventilation is neglected during colder months could be helpful. Is this simply triggered when the air temperature during the day drops below

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some threshold? Or is this set to occur for certain months of the year? In particular I am thinking about how easy it is to apply this model to other locations on the globe (as mentioned by the authors in the conclusion).

2) Although the discussion of the tile-approach and fractional-approach is sufficient (p11), I wonder if the tiled-approach was explored in more detail. For example, are there technical obstacles to completing one of the experiments using the tiles (i.e., substantial changes would be required to the offline code)? Or is it simply a computational issue (i.e., takes too long to run the simulation)? Was there any attempt to try the tiled-approach with the experiments described in section 4.2.3?

3) Are the authors considering investigating the sensitivity of some of their parameter choices in future work? For example, which parameters are most crucial to reproducing the anthropogenic flux predictions? In particular I wonder about the parameterisation of infiltration and I imagine some of the (reasonable) choices regarding changing infiltration at night or during colder months could lead to noticeable changes in the experiment results. Or are differences in the infiltration model relatively minor compared to the differences demonstrated between the DOM and SIX experiments in section 4.2.3.

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