

Review of: "Influence of a City Block on ES-CFD Coupled Analysis"

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Potential competing interests: No potential competing interests to declare.

The concept behind this paper is interesting. The paper presents an important study on the humidity and temperature distributions of city block buildings induced by solar radiation over seasons. The paper is not suitable for publication in its present form. However, there are a number of suggested revisions that would assist the author in the reformulation of the paper and enhance the study.

1. The objective of the study is not well explained.
2. It is necessary to add a clear diagram of the building and the rooms used as a basic starting diagram for this study, with clear architectures of the walls, roofs, and windows.
3. The captions for Figure 3 are not clear. What kind of solar radiation is presented, global GHI or Direct DNI? The maximum value of solar radiation, more than 1200 W/m^2 , looks to be too high. It should be less than 1100 W/m^2 . For winter solar radiation, the maximum value could be about 900 W/m^2 .
4. For the used expression of Pressure, you should give the reference.
5. You focus your study on the dew point temperature and vapor saturation inside the building, but the presented results are poor, and the tools used, such as TRANSYS software, aren't very suitable for the study of indoor rooms' humidity distributions and humidity saturations. You could use TRANSYS for solar radiation, climate data exploitation, and building envelope temperatures with particularity of windows' opening and block arrangements. However, for indoor humidity, temperature distribution inside rooms, and humidity saturation, you could use other programs and psychrometric diagrams of the humid air.
6. Figures 8 and 9 are badly presented and extended over 3 pages, with the captions integrated. You could divide them into some figures with separate and clear captions under each figure.
7. In your investigation, you have insisted on the convective heat transfer. It is not clear where the convective heat transfer coefficient comes from, how you have determined it, and how you calculated the associated flow for each building.
8. All the equations are badly written; you should use a MathType editor for the equations.
9. Please add a nomenclature table that groups all the symbols used in the paper.
10. To better present and exploit the results, it will be preferable to use the diagram of humid air to put the different temperatures, humidity, point temperature, and humidity saturation.
11. The conclusion and the abstract sections should be rewritten to clearly specify the objective and the outputs of the study.

