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 paper presents an interesting attempt to unify the internal and external environments through coupled ES-CFD analysis, addressing complex and relevant phenomena in building energy simulation. The study is commendable for its focus on critical aspects such as solar radiation and the surrounding urban context. However, some key methodological points need clarification to enhance the rigor and reproducibility of the research:

1.   Mesh and Domain Dimensions: Could the authors provide more details about the mesh configuration, especially near the city blocks? Additionally, what were the overall dimensions of the computational domain used in the simulation? Have the simulations been speeded up?

2.   Relative Humidity (RH) and Dew Point: The calculation of the dew point appears to rely on pre-existing RH data. Could the authors clarify the source of this RH data—was it derived from weather datasets? If so, does this imply that the dew point was determined only in the post-processing phase? It would also be valuable to understand why air humidity wasn't directly simulated within the CFD model.

3.   Radiation Modeling: Was a radiation model implemented in the CFD simulations? Including this detail would provide greater insight into the role of radiative heat transfer in the coupled analysis.

4.   Surface Temperature and Solar Exposure: The methodology for incorporating sunlight exposure into surface temperature calculations requires further explanation. For instance, the phrase, "The direction was set such that the sun culminated at noon for the analysis model," is somewhat ambiguous. How were incident angles on walls, roofs, and windows within the urban block determined? A more detailed account would clarify how solar exposure influenced surface temperatures in the simulations.