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.

- **General Comments**

This study presents a comprehensive analysis of the influence of city blocks on energy simulation (ES) and computational fluid dynamics (CFD) coupled analysis. The research addresses an important gap in the literature by examining the effects of solar radiation and surrounding conditions on thermal environment simulations in urban settings. The author employs a methodical approach, comparing scenarios with and without city blocks, and considers various insulation performances to provide a nuanced understanding of thermal dynamics in urban environments.

1. The title is suitable and clear.
2. The abstract is comprehensive, well-structured, and well-written.
3. The paper is structured according to the IMRAD method.
4. References are sufficient and recent.

- **Strength Points**

1. Innovative Methodology: The study introduces a novel approach to ES-CFD coupled analysis by incorporating the influence of city blocks. This methodology provides a more realistic simulation of urban thermal environments.
2. Comprehensive Analysis: The research examines multiple variables, including different insulation performances, seasonal variations, and the presence or absence of city blocks. This thorough approach allows for a more holistic understanding of the subject.
3. Practical Implications: The findings have significant implications for urban planning and building design, particularly in the context of energy efficiency and thermal comfort in densely populated areas.
4. Detailed Data Presentation: The paper includes numerous figures and tables that effectively illustrate the results, making the complex data more accessible to readers.

- **Weak Points**

1. Limited Scope: The study focuses on a simplified model of a one-story building, which may not fully represent the complexity of real urban environments with multi-story structures.
2. Exclusion of Certain Factors: The author acknowledges that the study does not consider the influences of opposite long-wave radiation and isolation reflected by the ground, which could impact the overall thermal dynamics.

3. Lack of Experimental Validation: The results are based solely on simulation data without experimental validation, which could limit the reliability of the findings.
4. Condensation Risk Assessment: While the study mentions the evaluation of condensation risk, the discussion on this aspect seems limited compared to other thermal factors.

- **Suggestions to Improve the Paper**

1. Expand Model Complexity: Consider including multi-story buildings and more diverse urban layouts to enhance the applicability of the findings to real-world scenarios.
2. Incorporate Additional Factors: Include the effects of long-wave radiation and ground reflection in future analyses to provide a more comprehensive understanding of urban thermal dynamics.
3. Experimental Validation: Conduct experimental studies to validate the simulation results, which would significantly strengthen the credibility of the findings.
4. Enhance Condensation Risk Analysis: Provide a more detailed discussion on the condensation risk assessment, including its implications for building design and urban planning.
5. Comparative Analysis: Include a comparison with other ES-CFD coupled analysis methods to highlight the advantages and potential limitations of the proposed approach.
6. Future Research Directions: Outline specific areas for future research, such as applying the methodology to different climate zones or incorporating more advanced urban features like green spaces or water bodies.

By addressing these points, the paper could provide an even more robust contribution to the field of urban thermal environment simulation and analysis.