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Journal Name:	**Advances in Research**
Manuscript Number:	**Ms_AIR_20223**
Title of the Manuscript:	**The Significance of Time Step Size in Simulating the Thermal Performance of Buildings**
Type of the Article	**Original Research Article**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline)

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PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	16: "demonstrated" A demonstration involves general behaviour and sure relationships, in your case you reported just one application in which it happens, so you should substitute "demonstrated" with "reported" (or similar) 40-41: "However, it has limitations in modelling the thermal performance of buildings due to the long computing times involved" Not only because of this. Add details of the mesh used in the calculations (nodes, cell sizes, first node distance from the wall…) and of the numerical settings (first/second order, wall functions, turbulence modelling…). Finally, CFD means Computational Fluid Dynamics. When using time steps in the order of hours, you completely lose the "Fluid Dynamics" part of the simulation, thus altering the output of the code. Even using 1 minute the CFD code is not able to reproduce the natural convection of air inside the Test Modules (the external flow is important as well). Natural convection is the driving mechanism that allows the heat in the air (the data you are comparing with) to be transferred through the boundary layer near the walls to the external environment, and vice versa. If you renounce to reproduce the fluid dynamic, than you are using CFD completely outside if its field of application. In this sense	

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	you should speak about "explorative CFD analysis", giving proper highlight to this aspect in the article. The final outcome of your research should be that, even if used outside of its field, CFD is surprisingly able to give not so inconsistent results with experimental data, even consistent (probably by error compensation effects) in some cases. Which can be also interesting.	
Minor REVISION comments	9-10: *"using a smaller time step size can provide more accurate results when simulating a shorter period"* It is expected for longer periods also. 17, 35: add the definition of the akronims	
Optional/General comments	In principle, in CFD application the adoption of smaller time steps is expected to be beneficial in terms of accuracy of results. It is "expected" because is not always obtained. In your case smaller time steps provided smaller temperature fluctuation than calculations with larger time steps and experimental data. Once it happen you have to try to identify the cause(s); in general this kind of issues is related to numerical diffusion. With larger time steps the larger numerical diffusion enhance the temperature mixing, and so its fluctuations. It turns that, in your case, a well-known numerical issue compensates model (physical, numerical, grid) deficiencies.	

Reviewer Details:

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