Interactive comment on "A Python-enhanced urban land surface model SuPy (SUEWS in Python, v2019.2): development, deployment and demonstration" *by* Ting Sun and Sue Grimmond

Anonymous Referee #2

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This paper describes the development of a F2PY version of the land surface model SUEWS and it demonstrates the potential benefits of using F2PY to facilitate usage of the model. It is well written manuscript but some clarifications and adjustments would improve the paper further. I have listed some point below in particular order.

1. It is un-clear what the actual capabilities of SuPy that are available for the user, e.g. is there possibilities for data preparation from surface data in SuPy? I recommend to add a list of the available functions (methods) that is included in SuPy, maybe not in the actual text but as a appendix, depending on the extent of all functions available

2. On page five new model capabilities area presented where pedestrian model output

is added. I recommend that this section is removed as this has nothing to do with the SuPy model per se. If the authors still want this in they should include evaluation of the new features as well, or have a very good reason why this is included here. The three variables (T2, q2 and U10) make use of similarity theory and are estimated within the building canopy layer (close to the ground surface) where this theory should be questioned. Therefore, a detailed evaluation should be added in conjunction with such a model development.

3. There is no reference to the code repository of SuPy in the text. Please add. I found it eventually (https://github.com/sunt05/SuPy) and found that the actual SUEWS source code is not included. Why is this not available as open source from the repository? Most other similar models (WRF, PALM4U, GFDL AM3, SURFEX etc.) have their source code available. Please state why the whole system, both SuPy and SUEWS is not available for other users/developers to be able to contribute to the system. One page 7, line 10, the authors state that using the Python utilities bug-fixing etc. is available. However, since the source code is close I cannot see that this is actually available. Please clarify, or release the full code to the public.

4. Figure 1. Swap around so that it happens in the correct order from a user perspective, i.e. SuPy to the left.

5. Page 8, line 25. What dose 'mobile' mean in this context, cell phone? Why would anyone like to run SuPy on a cell phone? If so, how to use it with other datasets that the one available through SampleData?

6. Page 8, line 25-30. There is a lot of "up-talk" of the system, e.g. "great shearability". This is unnecessary. You are not selling anything. Please go through the text for similar expressions.

7. All tables need formatting. Use right instead of justify alignment.

8. How is SuPy connected to stand-alone Fortran code of SUEWS. Can the same

input data be used in both system. Can SuPy write out data in the same format as the Fortran version of SUEWS? If not, please add this feature so that other systems easily can be used for both Supy and Fortran SUEWS.

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