

Overall, I commend the authors for significantly rewriting portions of the manuscript to make the whole thing more clear and accessible. I still think that there is much improvement that could be done further, as my comments below will point out. Some of my comments are regarding style moreso than technical content, so final decision on publication should be between the authors and the journal.

Authors: Thank you

One concern I have is that the reviewer comments from the first round were not fully implemented nor highlighted in the track changes version. Thus, it was hard to see if some comments were address satisfactorily or not.

Some examples:

Reviewer 1 - figure resolution: It does not look to me that any of the figure resolutions were improved.

Authors: The figures included in the paper are of high resolution

Reviewer 1 - Abstract and L49: The abstract was addressed but L49 did not change at all (it is now L58).

Authors: We removed stating that reference monitors were 'gold standard' in the Abstract. We left this sentence in the Introduction but have now removed it in this new iteration.

Reviewer 1 - L119: While technically this comment was addressed, you also switched from using the "coefficient of determination, R^2 ," to "Pearson correlation coefficient, R ," without any explanation or indication in the tracked changes version of the document.

Authors: We have now used Pearson correlation coefficient throughout

Reviewer 1 - L240: There is no new discussion in the paper, as was asked for. The response is just cut and pasted from the original manuscript.

Authors: We had included the following sentence to address the reviewer's concern about using non-independent meteorological parameters:

"As T, RH and D are not independent (**Figure S8**), the 16 linear regression models include adding the meteorological conditions considered as interaction terms, instead of additive terms. The remaining 5 relied on machine learning techniques."

Reviewer 1 - L333: I think the proper symbol is still not being used in the equation.

Authors: We have made this change everywhere

Reviewer 1 - L457: The text you pasted in the response does not match what is in the manuscript, now beginning at L574.

Authors: We had made a typo in our response which differed from the text in the main manuscript.

Reviewer 1 - L472: The text you pasted in the response does not match what is in the manuscript and is not highlighted; I think this is now L796.

Authors: We had made a typo in our response which differed from the text in the main manuscript.

Reviewer 1 - L528: This detail, about the sensor being in the shade, was not added to the manuscript but is important enough that it should be, now near L524.

Authors: Thank you. We edited the sentence to read as follows:

“The sensor CS19 is the only one that recorded lower temperatures than those at any of the other sites likely due to it being in the shade.”

Reviewer 2 - “For better readability of the final paper..”: Your response looks cut off; your sentence ends in “and”. As I say above, I appreciate your work put into restructuring the paper; the manuscript is certainly better. Maybe it is just the way the tables are formatted in the draft stage, but it doesn’t look like anything was done to improve the table readability.

Authors: We reorganized the tables in our last revision

Reviewer 2 - comment about “it” and “this”: There are still about 15 “this”s and about 6 “it”s that are used as subjects of a sentence.

Authors: Thank you. We have tried to eliminate as many of these as possible.

Reviewer 2 - Line 335: It’s not clear what is new as a result of addressing this comment.

Authors: We had reorganized the manuscript considerably including the old Figure S9

Reviewer 2 - Line 705: Should be “regimes”, not “regimens”. In the paper this is L873.

Authors: We have made this change

New comments based on the latest manuscript (with new line numbers):

L251 - What type of correlation is used here? I’m confused because of the switch from the first submission to this one with no explanation.

Authors: We have clarified that this is the Pearson correlation coefficient in this revision

L270 - What instrument errors add uncertainty for 1-minute data but makes hourly data more certain?

Authors: We have clarified that the error is due to the finer time resolution:

“..likely due to the impact of passing sources. It is also important to mention that minute-level reference data may have some additional uncertainties introduced due to the finer time resolution”

Section 2.3 - I think this section is new (though its not highlighted as such), and I appreciate the attempt to better outline the paper. I wonder now, though, if there is too much repetition in the paper now. This section of three lists are essentially the section headers 2.3.1 - 2.3.7 and 3.1.1 - 3.1.7 (sections 2.3.8 and 3.1.8 also repeat). Is this much redundancy necessary? Also, most are exact repeats but some are not exact, which makes me wonder why. If you are going to repeat, be consistent with the wording and make these lists in Section 2.3 have a numbering system that matches with the rest of the paper.

Authors: Thank you. We have compressed all of section 2.3 and subsections to read as:

Section 2.3.2 - An entire section of just one sentence is weird to me. With the previous comment, I don't think this is necessary.

Authors: Thank you. We have got rid of this subsection.

L433 - should reference Fig 4

Authors: Thank you. We have added this reference

L536 - be specific, which sensors? Why?

Authors: Thank you. We have tried to be more specific:

“RH values at co-located sites during C3 and C4 tend to be higher than conditions experienced by Love My Air sensors: CS8, CS10, CS15, CS16, CS17, CS18, CS20 likely due to the different microenvironments experienced by the different sensors.”

Fig 2 - “a)” and “b)” are in odd locations, hard to read

Authors: We have adjusted the position of these labels

L596 - This paragraph looks mostly like information that should be in the figure caption and not repeated in the text.

Authors: Thank you. We have removed this paragraph

L612 - "evidenced" instead of "evinced"

Authors: Thank you. We have made this correction

Section 3.1.5 - Are both R and RMSE needed to get your points across?

Authors: Thank you. We have removed reporting R

L683 - Should this actually be higher? I'm not sure I understand how this relates to L668-669. Figs 7 and 8 aren't high enough resolution to figure this out. Either way, why? I don't think Section 4 addresses why.

Authors: Thank you. We have removed reporting R

L711 - Why? I don't think Section 4 addresses why.

Authors: Thank you. We have addressed this with the following sentence:

"We note that although the uncertainties in the data are small, the average normalized range tends to be quite large likely due to outlier corrected values produced from some of the more complex models evaluated using the C3 and C4 corrections."

L731 - should reference Fig 10

Authors: Thank you we have corrected our figure numbers.

L733 - this should be Figure 10, not 9

Authors: Thank you we have corrected our figure numbers.

Fig 10 needs bigger fonts to be readable. There is also a stray sentence below the x axis label. As with all other figures, the resolution is low.

Authors: Thank you we have removed the stray sentence.

Section 4 - By this point in the paper, I have forgotten what C1, C2, C3, and C4 are. A quick reminder/summary might be helpful (many readers may skip to this section of the paper anyways).

Authors: Thank you. We have added this reminder in the paper.

L780 - missing comma after seasonality

Authors: Thank you we have added this

L794 - what other potential factors?

Authors: Thank you we removed this phrase

L856 - "demonstrated,"

Authors: Thank you. We have made this correction.

To summarize my thoughts on organization, it looks like Section 2 is on methods of data manipulation, Section 3 is stating what is plotted (with no actual analysis), and Section 4 is where the analysis is supposed to take place. This organization leads to a lot of repetition, but some inconsistent repetition. For example, Section 4 does not actually address each subsection found in Sections 2 and 3, nor does it reference each figure and table like the previous sections do. (Because all figures and tables are referenced in Section 2 and 3, it might be a bit difficult to figure out figure placement when the paper is typeset.)

Authors: Thank you. Section 3 comprises of Results and Section 4 comprises of the Discussion.

I would think, at the very least, that Sections 3 and 4 can be combined in some way and that an analysis is presented for each figure and table. Some of what is currently in Section 3 can go in the Figure captions or in Section 2. A new Section 4 can be a short summary of the take-home conclusions from the study.

Authors: Thank you. We have tried to implement as many of these suggestions as possible.

These are my suggestions to make the paper read better. Overall, I think the science and technical content that are here are useful, but it is hard to pick out the conclusions in the current format. Some of that might just be formatting the current paper and typesetting in the journal format will help, but it is hard to say that for certain.