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Geoscientific Model Development Discussions
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EGU

Interactive comment on "Calculating human thermal comfort and thermal stress in the PALM model system 6.0" *by* Dominik Fröhlich and Andreas Matzarakis

Anonymous Referee #2

Received and published: 26 October 2019

General remarks:

The article describes the implementation of PT, UTCI and PET in the biometeorological module of PALM-4U as well as the development of a new multi-agent tool. Results for PT and UTCI are shown and the results of PT are compared with the results of the model SkyHelios.

General remarks:

I am missing the precise description on how the agents who travel autonomously make their decisions. This is an important and interesting point in my opinion. The comparison with SkyHelios (but also between PT and UTCI) and its discussion needs a better

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support by the presentation of additional parameters in Figures with discrete color bars (see also specific remark 10) in my opinion. Anonymous Referee#1 has already made many interesting points. I would be interested in the response of the authors.

Specific remarks:

1. P1, ln 13,14: Please rephrase

2. Figure 3: Add a north arrow please

3. P10, ln 26: The diurnal cycle is not shown, only two instances – maybe this should be pointed out.

4. Results: Please make it clearer whether you are referring to iPT. This new term was broadly discussed in the methods but in the Results only PT described.

5. Why are no PET maps shown?

6. Figure 4-7: Please include a North arrows. Due to the wide range of values a discrete color bar is absolutely necessary in my opinion.

7. P12, ln 10: I would rather use “wider range” than “a rather wide range”. From slightly warm to warm is not really a big range in thermal sensation in my perception.

8. P13 ln 1: Are these now the PT values or UTCI. What are the UTCI values then?

9. P13, ln 4: I don’t really see that why Figure 6 has more homogeneous areas than Figure 4. Could you mark them?

10. P16, ln5/5: I am not convinced, that a difference of 10 °C PT is a reliable and plausible result. I think it needs more additional analysis and maps of MRT and wind speed to better understand what causes these differences. Was MRT or wind speed validated for PALM or SkyHelios? Could you include this information?

Technical corrections:

P3, ln 6: for (not fpr)

P3, ln 18: Write the full name of the meteorological variable. If you decide on italics, please be consistent throughout the manuscript when you use Ta, VP, TMRT.

P3, ln 20: This is the first occurrence but it applies though out the manuscript: Be consistent either use Figure 1, Section 1, . . . or fig. 1., sec. 1, tab.1, . . .)

P4, ln 1: missing and between the citations

P4, ln 18/19: There seems to be something wrong in this sentence.

P5, ln 6: I wouldn't call it a narrow, but limited range. In relative humidity it is not even limited.

P7, ln 10: lagrangian (not langranian)

P9, Figure 3: on 6th of March (not on a 6th of March).

P9, ln 2,3: shouldn't it be ". . .there are buildings with different heights ..."?

P9, ln 6,7: Is the formatting of the doi correct?

P10, ln 2: 10 minutes (not 10 Minutes)

P10, ln 27: Only reference to Figure 4, not 5

P11, ln ? : Make "figure 4" consistent with the other references.

P12, ln 12: Tmrt or mTmrt?

P13: Figure 6: Missing blank space between Thermal and Climate

P13, ln 4: . . .Figure 6 one can see. . . (not "on can see")

P14, ln 5: minimum value (not "minim")

P14, ln 5: one can see . . . (not "on can see. . .")

P15, ln 14: and thus?

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