Hydrol. Earth Syst. Sci. Discuss.,
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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Evaluating and improving modeled turbulent heat fluxes across the North American Great Lakes" *by* Umarporn Charusombat et al.

Anonymous Referee #2

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General comments

The manuscript focuses on validation of modelled latent and sensible heat fluxes from the surface of the Great Lakes. Five algorithms from three parent models are tested against in situ data from Great Lakes Evaporation Network. It is in general a well written manuscript and a valuable contribution to the research field.

I would like to start with commenting the understandability of the abstract. I had to read the full manuscript before understanding the abstract. It is very technical, and I would suggest to refine the language to the extent that a non-expert can understand it. The introduction, however, is very well written and delivers the right message on why this

study is of importance. The method section is also easy to follow, although some parts gets very technical, especially page 10-11. I understand that technical details have to be provided, but I would suggest to refine the text to make it more understandable. Furthermore, this part is not my expertise, so I cannot comment on the correctness of the algorithms. The results section is easy to follow, but I think section 3.3 (Error dependence) fits better in Supplementary materials. The discussion section is mostly focused on the limitations of the study. Some parts that are summarized in Conclusion section could have been brought up already in discussions to balance up the discussion on the limitations.

Specific comments

[Page 7, Lines 25-26] Which version of COARE is used in the study – 2.6, 3.0 or 3.5?

[Page 14, Line 21] Remove the punctuation (.) after "into"

[Page 14, Line 24] Remove on of the "due to"

[Page 15, Line 6] Insert a "f" after "improvements o"

[Page 17, Line 2] Replace (:) with (.)

[Page 17, Line 4] Insert "section" before "3.3"

[Page 18, Lines 13-14] Remove "were filtered out" at the end of the sentence

[Page 33, Figure caption 1] Monitoring stations are referred to as lighthouse-based monitoring platforms when Fig. 1 is first brought up in the manuscript.

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