

## ***Interactive comment on* “Evaluation of a complementary based model for mapping land surface evapotranspiration” by Z. Sun et al.**

**S. Thompson (Editor)**

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Dear Authors,

You have now received 2 comments from referees regarding your paper.

Both referees agree that there is novelty and interest in the manuscript, however issues relating to the communication, style, methodology and quality assurance methods in the manuscript have been brought up. These issues must all be addressed before the paper could be considered for publication.

Specifically, please:

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- Either provide a much more substantial argument relating the methods used in this study to Complementary Theory than is currently provided, or alter the title, as suggested by Reviewer 1. - Restructure the manuscript to ensure that the specific research questions are identified very clearly, as suggested by Reviewer 2; and ensure that the methods used to address each question are explicitly explained, as both reviewers have suggested. - Provide sufficient information about the available data, including footprint data for the flux tower, rationalization for working with small-grid-cell ASTER products (including discussion of the potential confounding role of advection), and a justification for the particular choice of time periods used to evaluate the different kinds of model - Include a control equation to compare the Venturini Equation with, as suggested by Reviewer 2 - Provide detailed information about the estimation of alpha from the land surface characteristics, as suggested by Reviewer 1 - Provide detailed information about the timestep used to estimate the fluxes from ASTER and how the ASTER observations were interpreted in light of a daily ET estimate. As reviewer 1 notes, it is not clear whether the authors have, in fact, estimated an instantaneous ET value associated with the timeframe on which the ASTER image was captured.

The manuscript as a whole would benefit from further editing as there are several small errors in typing, English language usage, etc. Please ensure that it receives an edit of this nature prior to resubmission.

Please note that both the technical and communication issues must be addressed for a revision to be considered further for HESS. That said, it appears that most of the technical issues relate to providing a clearer explanation of methodology, and addressing concerns about advection (potentially this could be addressed by providing a comparison with a lower-resolution thermal product). I hope you will consider providing such a detailed revision, and look forward to seeing an improved manuscript.

Yours truly

Sally Thompson

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