

Response to: Monitoring Vegetation Condition using Microwave Remote Sensing: The Standardized Vegetation Optical Depth Index SVODI
Reviewers' comments are in italics, our answers are plain text.

Answers to Nataniel Holtzman#1

Thank you for reviewing our manuscript!

Comment E1.1 *Line 10: delete “by”*

Answer to E1.1 Thank you, we removed it.

Comment E1.2 *Line 18: delete “anomalies” after “soil moisture” as it is redundant – you already said “anomalies” earlier in the same sentence*

Answer to E1.2 Removing it would allow the interpretation that one part of the sentence is about raw soil moisture, and the other part about anomalies. Therefore the word it is necessary to keep the sentence unambiguous.

Comment E1.3 *Line 65: missing “and” before “estimate”*

Answer to E1.3 Thank you, we added it.

Comment E1.4 *Line 192: please include a citation for L-band being mostly sensitive to vegetation structure*

Answer to E1.4 We added a suitable citation, to a paper about temporal L-band dynamics.

Comment E1.5 *Line 193: change “interested on” to “concerned with”*

Answer to E1.5 Thank you, that is indeed better

Comment E1.6 *Section 3.1.1: Based on the Hao and AghaKouchak (2013) and Guo et al. (2019) papers you reference, it seems like the choice of a copula function is important when constructing a multivariate index. Can you mention the copula that you used in the theoretical example that you discuss here?*

Answer to E1.6 Added it (its a normal copula).

Comment E1.7 *Figure 2: the terminology of “p-values” is confusing here. Do you mean values of cumulative probability density, or something like that? Typically, p-values refer to testing statistical significance, which it doesn’t seem like you are doing in this figure*

Answer to E1.7 Generally we think that using the letter p for this variable is reasonable. It refers to a probability, which often are denoted as p . However there were indeed two cases where outright “p-value” was written. This was apparently not only confusing, it was also not necessary (just writing p is sufficient). We adjusted the relevant parts (line 305-312)

Comment E1.8 *Line 310: again, please use a different terminology than “p-value”*

Answer to E1.8 See previous question.

Comment E1.9 *Line 269: I found this sentence confusing at first; it would be useful to say explicitly that the correlation (as a function of time offset) is what you are finding the local maxima and first derivative of*

Answer to E1.9 Thank you, we reworded the sentence a bit as per your suggestion

Comment E1.10 *Line 348: maybe I don’t understand the TCI, but I thought the TCI represents a cause (heat stress) of vegetation changes, not an effect*

Answer to E1.10 You understand the TCI correctly, our wording was poor. We adjusted the sentence to reflect that TCI measures a *cause* of vegetation changes.

Comment E1.11 *Figure 10: “Fraction of percentage area” is redundant; just say “Percentage area.”*

Answer to E1.11 Indeed. Thank you, we fixed it

Comment E1.12 *Section 4.2.4: In Figure 11, it looks like the SVODI over the Amazon has more high frequency variability and less low frequency variability, compared to the VHI and scPDSI. Could you add a sentence to this section addressing this difference and providing a possible explanation for it?*

Answer to E1.12 An excellent observation, we did not notice this before. We added this observation and some plausible reasons for it to the text.