

As stated in my previous review, Merrick and coauthors present a novel dataset of remotely sensed vegetation indices (VIs) (NDVI, EVI, NIRv, NIRvrad, FCVI) from an UAS in a tropical forest canopy in Panama. They explore both spatial and temporal variability between indices and highlight potential uses for these indices at those varying scales. Specifically, the authors explore temporal correlations between GPP and VIs over the course of a day, diurnal changes in the spatial variation between VIs, and dominant spatial scales for variability in VI signals.

I continue to be in support of the acceptance and publication of this manuscript and am generally happy with the authors response. However, I have a few more minor comments I feel should be addressed prior to publication. They are outlined as follows:

Lines 24-25: the sentence will be more clear if rephrase it to say "... these indices and the properties that are presumed to be measured by these indices, such as gross primary productivity (GPP) and absorbed photosynthetically active radiation (APAR)."

Line 25: 15cm and greater should just provide the maximum spatial size

Line 27: 'emerging vegetation indicators' is unclear and not specific enough – better to name them which will also help with the papers longevity when the indicators are no longer 'emerging'. This appears a few other times and I tried to catch all of them but worth doing a read through to double check.

Line 34: same comment as line 27

Line 38: the 'are' in 'are not well characterized' refers to 'spatial and temporal heterogeneity' so I believe it should be 'is not well characterized'

Line 40: change to 'forests'

Lines 59-64: This section might be clearer to read if you just replace the wording with equations then defining the acronyms

Line 70: Here you could probably replace 'tropical regions' with a statement about evergreen regions as a whole since the statement still applies and it's a little broader. Keeping it as is also works.

Line 79: SIF has not yet been defined – can remove it from this portion entirely or add a separate sentence describing what SIF is (although I think it would be better without)

Lines 83-86: This sentence is too long and convoluted. Break it up.

Line 89: change to 'demonstrated that FCVI tracked GPP...' so you keep the subject and the verb close together – it makes the sentence more straightforward

Lines 96-98: This sentence is also fairly long and convoluted. Consider replacing with an equation then a description or breaking up the sentence.

Line 145: It's unclear what the 'data corresponding to the January 30 flights' is referring to. I think there might be a typo in here.

Line 156-157: 'A summary of materials...' should go earlier in the section or can be removed entirely

Line 173: You previously say the GPP data was Jan 30 (Line 145) so one of these must be wrong

Line 173: I think it would help to reference the figures or sections where these different analysis are done immediately following the statement of what's being done. It will help provide the reader a roadmap to the different sections of analysis.

Line 204: 'a joint relationship between...' is vague. Either be more specific or remove this.

Line 216: I'm not so sure about the statement 'NIRvrad is also a more efficient measurement of GPP...' Do the authors mean to say it's more efficient than PAR? I would disagree since here it depends on the scale and the instrumentation used to take the measurements, AND the authors show a stronger agreement between GPP-PAR and NIRvrad-PAR than NIRvrad-GPP. I think the point that NIRvrad tracks APAR should be made more strongly, rather than trying to pitch NIRvrad as an alternative to PAR or APAR measurements.

Figure 2: The smoothing line is not defined. Please define it in the figure caption

Lines 237-238: It might be easier to see the comparison between the two if they are located next to each other in the figure. You could easily switch the locations of NIRv and FCVI since those are also compared with each other.

Line 245 (and the following paragraph and Figure 3): stay consistent with time notation. This line starts with 12:00 and 1330 but would be more clear if the time descriptions in the paragraph and figure are all notated the same.

Line 248: Is CV defined somewhere? Might need to be defined again or made more clear what this is referring to.

Figure 3: I think it would help to have the colors of the distributions be the same for flights at the same time but different days. For example the 15:30 flight times on Jan 30 and 31 could be colored the same to make comparison between the two easier. Further, I think it would help if the times were vertically aligned between days.

Line 296: same comment as above about 'emerging vegetation indicators'

Line 308: 'which have high reflectance in blue wavelengths compared to fully leaved crowns' deserves a citation

Line 318: remove the statement 'and the scattering of SIF photons'. Since most of this was removed from the results/discussion it seems distracting as the first sentence in the conclusions.

Line 322-323: remove 'which SIF requires' – I think the framing is better as a 'these can help inform SIF and each other' rather than pitting different RS indices against each other. Also since you're not presenting SIF data you can't make the argument NIRvrad is a more effective proxy.

Line 325: 'which may pave the way to improve our understanding of the relationship between GPP and remote sensing observations' – add a small clarification on HOW it will do this, be more specific.