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Temporal variability of observed and simulated gross primary productivity,
modulated by vegetation state and hydrometeorological drivers

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De Pue and others investigate multiple methods for estimating GPP against observations. The results are insightful and well written and I recommend the manuscript be published after considering the following rather minor comments.

Comment 2.1 — How is 'homogeneous' defined in section 2.1?

This was further clarified in the text as follows:

“ It was ensured that the sites had a homogeneous land cover, which could be captured by the remote sensing products. A site was considered homogeneous when in 1 × 1 km area surrounding the station location was dominated by a unique vegetation type (i.e., grassland, deciduous forest, evergreen forest). The site homogeneity was visually evaluated using high-resolution satellite images in Google Earth. ”

Comment 2.2 — Explaining the Papagiannopoulou et al. (2018) delineations would be helpful because these are not in common usage. I see now that they are defined in the text; pointing to this text would help.

It is unclear which actions need to be taken to improve the text?

Comment 2.3 — Please use the multiplication sign instead of the star for formal equations

Indeed, this was corrected. For example:

$$EVI = 2.5 \frac{R_{770-800} - R_{630-670}}{R_{770-800} + 6 \cdot R_{630-670} + 7.5 \cdot R_{460-475} + 1} \quad (R-1)$$

Comment 2.4 — table 2: 'shortwave' can be used

Indeed, this was corrected.

Comment 2.5 — the y axis in figure 3 is a bit confusing to me regarding the '-' symbols (and fig. 4, and 5)

The '-' symbol is used to indicate that the values on this axis are dimensionless. An example is the Pearson correlation. In principle, the unit could be given: $\text{gC m}^{-2} \text{d}^{-1} \text{g}^{-1} \text{C m}^2 \text{d}$. However, this is uncommon and unhelpful for the readability of the figures. The labels of the y-axis in these figures was kept as is.

Comment 2.6 — Fig. 7 is a bit much to look at and I wonder if this analysis would be better off in an appendix.

This figure shows the different responses to hydrometeorological drivers in various biomes. It is discussed extensively in the manuscript. Though we agree that this is a dense figure, it is our opinion that it is insightful to have it in the main manuscript. We prefer not to move this figure to the supplements.

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