

Interactive comment on “Water stress induced breakdown of carbon-water relations: indicators from diurnal FLUXNET patterns” by Jacob A. Nelson et al.

Anonymous Referee #2

Received and published: 14 November 2017

This study proposes two data-driven indicators using eddy covariance data to examine water stress induced breakdown of carbon-water relations. These results are scientifically interesting. Sharing code is also a good practice and should be praised, although the calculations seem to be straightforward. Given the problems with the manuscript, I recommend that it be reconsidered after a major revision.

The biggest problem of this manuscript is that the Results section is very weak. It only contains three relatively short paragraphs, which is far from being sufficient for a research article. The authors should substantially strengthen this section.

The authors claimed that they proposed two indicators. Are these indicators new and

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have not been used in the literature? If they have been used in the literature, then they are not new and the authors should rephrase this statement. Take diurnal centroid as an example, it was used back in 2003 (Wilson et al. 2003), and what is new with the relative diurnal centroid?

The abstract should be rewritten to contain less introduction and more results.

The Introduction section is organized by sub-sections. The three levels of organization is pretty unusual for scientific papers. I suggest that the authors remove sub-section titles and rewrite it as a regular Introduction. If the authors intend to provide more background material, it is better to add a Background section right after the Introduction.

It is unclear which FLUXNET database (LaThuile or 2015) is used in this study. Details should be provided. The Baldocchi et al. 2008 paper does not seem to be the proper citation for the database used.

The supplementary figure can be moved to the manuscript given the relatively small number of illustrations.

Line 30, page 4: FileS1 is a nice way to present study sites. Adding some technical details about how this kind of file was created will be helpful to the audience who might want to produce this kind of illustration as well.

Figure 2: An overall title should be added for the figure. Moreover, “upper” and “lower” should be changed to something like “Upper panels:” and “Lower panels:”, respectively.

Line 8, page 3: “are GPP” should be changed to “GPP are”.

Figure 2: An overall title should be added for the figure. Moreover, “upper” and “lower” should be changed to something like “Upper panels:” and “Lower panels:”, respectively.

Line 8, page 3: “are GPP” should be changed to “GPP are”.

Line 25, page 8: remove “be”.

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