

Interactive
Comment

***Interactive comment on* “Evaluation of satellite based indices for primary production estimates in a sparse savanna in the Sudan” by M. Sjöström et al.**

Anonymous Referee #1

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The study aim is to assess the suitability of two Spectral Vegetation Indices calculated from MODIS data to estimate primary production of a sparse savanna ecosystem, comparing satellite and Eddy Covariance data. The proposed topic addresses very important scientific questions, related to the scaling up of ecosystem fluxes using remote sensing data, which is one of the current mayor challenges in the biogeosciences field. The paper is well-organised and clear. The results are interesting and well argued. I think that both the methods and the discussion should be extended and more discussion is needed, as there are some specific questions the reader is somehow left with. Why did the authors use a soil water content factor to estimate R_{eco} ? Why did the authors choose these indices/why not other indices like MODIS NDVI and MODIS

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NDWI to compare their performances? Why are chlorophyll-based and water-based indices correlated in this specific case (why are there strong relationship between EVI and SIWSI?)

The authors should also quantify vegetation heterogeneity and landscape fragmentation, as their footprint (3x3 pixels) seems to be bigger than their EC footprint (how much is the EC footprint?).

Specific comments:

p.2992, line 1: do you mean R eco ?

p. 2994, Results, line 9. Although vegetation index values are relatively low... explain. If vegetation indices are high, there is saturation so you might not be able to see a trend. But if the values are low?

p. 2994, Results, line 17. Although the analysis show... Did you mean... As the analysis show ?

p. 2994, Results, line 19-21. I am not sure what you mean here. Explain better.

p. 2996, line 1. Is this significant?

p. 2996, line 5: It is also apparent... Maybe you could explain better this statement later in the Discussion chapter

Table 1: explain the missing data thing (5th variable, what do the lines mean??)

Fig. 2 (and other figures): for the lazy reader who is not reading the text, explain where the data come from (MODIS EVI, Eddy Covariance GPP, etc)

Fig. 2c. The light green dotted horizontal line is not clear. If the 2a and 2b seem to be the 0, it is difficult to understand what the line in 2c means.

Interactive comment on Biogeosciences Discuss., 5, 2985, 2008.

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