

Report on the revised version of “Investigating the Usefulness of Satellite derived Fluorescence Data in Inferring Gross 1 Primary Productivity within the Carbon Cycle Data Assimilation System’, by Koffi et al.

The Authors did a considerable work to improve the previous version of the manuscript. However, it seems to me that there are still some errors inside and I recommend an additional iteration of the revision if possible. I add that overall the paper is still quite weak in terms of clarity.

Remarks:

Page 11: The Authors insist in referring their 13 PFTs to a wrong paper (Wilson and Henderson-Sellers (1985))

Page 15: It seems that the Authors choices for the data to be used for comparison are unfortunate: in this case, measured SIF data are missing. Why not to choose another time period?

Page 17. ‘A moderate positive relation is found between SIF and GPP....’, I cannot find this in the graphs.

Page 20: ‘The small variations in GPP at certain episodes can be explained by the temporal variations of both the temperature (Figure 4a)’. I cannot understand.

Page 24: ‘Flexas dataset’, Are the Authors referring to Jaume Flexas? It doesn’t seem to me the correct way to refer to a person.

Page 25: ‘Some of this mismatch corresponds to unlikely locations for satellite-derived SIF, e.g. central Australia.’ It seems to me that is the modelling to be unlikely, not the satellite SIF. Central Australia is almost a desert.

Page 30: Results of the comparison with Zhang findings would be more conveniently presented in the Results section.

Page 33: ‘uncertainties in the radiation’. Which kind of uncertainties?

Page 44: ‘several leaf area index’, possibly, leaf area indexes (or indices).

Page 45: ‘The observed GPP from is in black’. From what?

Caption of Figure 5: 'are show' -> are shown.

Caption of Figure 6: 'Correlations between CCDAS simulated quantities and between simulated quantities...'. I believe that more care is needed in the writing, indeed.

I recommend also to consider the following recent paper:

Yang, X., J. W. Tang, J. F. Mustard, J. E. Lee, M. Rossini, J. Joiner, J. W. Munger, A. Kornfeld, and A. D. Richardson. 2015. Solar-induced chlorophyll fluorescence that correlates with canopy photosynthesis on diurnal and seasonal scales in a temperate deciduous forest. *Geophysical Research Letters* 42:2977-2987.