Interactive comment on “Precipitation as driver of carbon fluxes in 11 African ecosystems” by L. Merbold et al.

G. Wohlfahrt (Editor)

Georg.Wohlfahrt@uibk.ac.at

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The paper by Merbold et al. has been assessed by two reviewers - recommending minor and major revisions. Both reviewers acknowledge that the paper presents important and useful data for the African continent for which data used to be scarce, but at least one of the reviewers critiques the descriptive approach of the data analysis. One reviewer comments on a mismatch between objectives as formuled in the introduction and the analysis in the paper. In addition, the statistical analysis is questioned because meteorological drivers are correlated and data on LAI are missing.

I too believe that major revisions will be necessary to make the paper acceptable for publication in Biogeosciences. I thus suggest the authors carefully read the reviewers and my (see below) suggestions and appropriately revise their paper.
Specific comments: (1) p. 4075, l. 22: exchange of CO2 (2) Eqs. 3 and 5: no need to indicate multiplication by a "*" (3) Eq. 5: add negative sign at beginning of RHS of eq. and remove *(-1) (4) p. 4080, l. 5: the temperature response is implied by a Q10=2; how come that this value was chosen and what are the consequences of choosing this particular value for the analysis? (5) p. 4080, l. 9-11: show regression stats even if not "convincing" and reversely should stats for T vs. Reco for other sites; otherwise the analysis appears vague and subjective; does this imply that precip (soil water content) is not driving Reco of these sites - in contrast to what the title suggests? (6) p. 4080, l. 21: 2 kPa instead of 20 mbar (7) Table 2: consistently report model (manufacturer) for the sonic anemometers, e.g. R3 (Gill) (8) Fig. 2: not really necessary in this cross-site analysis; the approach is well known and described in the methods; I suggest to remove this figure (9) Fig. 7: what do the lines represent? (10) Fig. 8c: rescale y-axis to the range of measurements; r2 and p-values are missing

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