

3 February 2020

Re-review for the paper submitted by Flechard et al. MS No.: bg-2019-333

This is my second review to this paper, the present one after the authors had included their responses to the two reviewers' reports.

I'm satisfied with the point-by-point responses provided to the reviewers comments and with the changes introduced in the text. I think that the reading has improved after rearranging some sentences. I think that the authors have succeed to convey the message of the importance of their task of gathering the maximum number of measurements and observations, and modeling, to discuss the uncertainties of measurements and models, and how these uncertainties translate to the interpretation of the biogeochemical interactions of the C and N cycles. Then, an assessment can be made of the main gaps and future directions.

As suggested by rev. 2, the text has benefitted from the transfer of the detailed BASEFOR model description to the companion article in Part II.

I have only very minor remarks. I suggest to include them to the final version as a final touch.

Minor remarks:

Fig. 6 In the text for the figure, besides MAE and NRMS, add R2, coefficient of determination.

Fig. 8. Explain in the text for the figure that only dots corresponding to observations are labelled.

Fig. S4. Include a legend for discontinuous and continuous lines in the MAP and MAT plots.

Line 605. In response to rev 2 to better defini the "broad negative correlation between MAP and MAT" the autors have included the R2 value=0,24, line 606). However, if one wants to highlight the "negative relationship" it is best to use the correlation coeficient (r) which in this case will have a negative sign, so that the inverse relationship is better displayed.