Dear Editor, dear Reviewer 2

Thank you for your final comments and recommendations. All of the these final comments have been addressed and the submission is now ready for publication.

Rev2

(1) The meaning of the black line in figure 2 needs to be explained. This was brought up already in the first round of reviews, but I think the authors overlooked this specific comment.

*Reply: Explanation was added to the figure caption*

(2) Line 199-202: Reading this statement one get the impression that solar-exposed freshwaters and soils are insignificant biogeochemically, but this is of course not correct as volume does not necessarily scale with activity. The solar exposed surface waters and surface soils are disproportionately biologically active compared to most groundwaters and this should come across here.

*Reply: a sentence now underlines the disproportionality of biological activity of sunlit environments in comparison to the large-volume dark habitats.*

(3) Line 226-227: Awkward sentence. Quantitative data? Evidence? Strong support?

*Reply: We rephrased the sentence.*

Non-public comments from the Editor to the Author:

In addition to the small points raised by the reviewer, I do have one additional recommendation, which is to emphasize the difference - and the difficulties in differentiating - heterotrophic CO2 from dark autotrophic CO2 fixation. The data in the (new) Table 1 for example contain some comments in this direction, but I think it would help the reader if you point out also some methodological aspects and stress in the text to which extent the data in this Table refer to total dark CO2 fixation (autotrophic + heterotrophic), or whether they specifically report heterotrophic CO2 fixation.

*Reply: a short paragraph was added to critically emphasize the methodological aspects and uncertainties with heterotrophic carbon fixation data.*