

Dear Editor,

First of all, we thank the Editor for their careful reading and the opportunity to improve our study.

Editors points:

- 5 1. In the "data availability" section, please remove the "available upon request to the corresponding author" remark. **We removed the phrase.**
2. The ICON licensing information page referenced in the "Code and data availability" section seems obsolete (it starts with a "This site is deprecated!" header) - please update the links and license statement accordingly. **We replaced the old link with <https://icon-model.org/>**
- 10 3. In equations: **We implemented the suggested changes.**
 - avoid using italics for text subscripts (e.g., "total", "sat", "ice", "i") - some of these are given with italics, some without;
 - equation formatting for (A2) could likely benefit from some adjustment of the bracket size (this could help: <https://tex.stackexchange.com/questions/23161/using-underbrace-without-having-left-and-right-scale>)
- 15 4. Please provide Fig. 1 in vector graphics format **We uploaded the Figure as a vector graphic**
5. In references: **We cahnged the references.**
 - fix URL (repeated <https://doi.org/> prefix) in: Boutle et al. 2014, Hill et al. 2015, Larson et al. 2013, Lebsock et al. 2013 & Winker et al. 2010;
 - correct bibliographic data for Wegener 1911 - currently it leads to a 1912 review of this book, perhaps this URL
 - 20 could be better: <http://worldcat.org/oclc/39667532>
 - if providing the worldcat url for Wegener’s book, Bergeron’s book can be pointed to with <https://worldcat.org/oclc/31921934>
 - for Findeisen’s work, the following DOI can be added: <http://doi.org/10.1127/metz/2015/0675>
- 25 6. Please release an updated cleaned-up code archive with the following files excluded: .git folder and its contents, all __pycache__ folders and their contents, files with tilde-sufixed names (these are also part of the referenced repository, and can safely be removed). For information on how to automate git repo archival on Zenodo, see: <https://docs.github.com/en/repositories/archiving-a-github-repository/referencing-and-citing-content>
We added a new Zenodo link with the a cleaned-up version: <https://zenodo.org/records/10788230>
7. Other:**We changed the manuscript towards your suggestion**
 - page 15, line 289: change "doesn't" into "does not"
 - 30 – page 15, line 293: correct "dta" typo

We additionally included the following sentence to the acknowledgments:

We thank Takuro Michibata and a anonymous reviewer for comments that led to improvements in the analysis and manuscript.