

The authors have adequately addressed most of the reviewers' comments.

There is one comment that remains to be addressed, which relates to the timing of the riverine alkalinity flux. As reviewer #1 notes in their first-round review comments, weathering is a slow process, and they question that changes in atmospheric CO₂ affect the riverine flux on a millennial timescale. In their response 2(b) to reviewer #2 comments, the author provide considerations about timing, but these are unclear and were not reflected in the manuscript. Please clarify your response on the timescale of the riverine flux, and revise the manuscript accordingly.

On the revised manuscript, parameterizations for the riverine flux and CaCO₃ dissolution are provided in the results, rather than in the model description section of paper. Please consider if they would be better placed in the model description section. E.g. the riverine flux parameterization could be described in the first paragraph on p. 5, where the flux is first introduced.

Please read the manuscript carefully before submission as a few typos were introduced in the revision.