



EGUsphere, author comment AC1
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Reply on RC1

Moritz Liebl et al.

Author comment on "Modelling large-scale landform evolution with a stream-power law for glacial erosion (OpenLEM v37): Benchmarking experiments against a more process-based description of ice flow (iSOSIA v3.4.3)" by Moritz Liebl et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-352-AC1>, 2022

Dear Leif S. Anderson,

we thank you for your constructive and positive review. We appreciate that you find our benchmarking experiments robust and detailed. Before we get into the details when preparing a revised version, here is a brief overview of the key issues you raised that we will address.

We agree that the extensive and detailed description of each experiment makes it at some point difficult for the reader to focus on the main purpose of the benchmark study. We will try to shorten and synthesise the results of the experiments in a way that the benefits and negatives of each model are addressed more clearly.

We appreciate your comment that we should include citations in a few places to better support some statements. We will include citations in the suggested sections regarding the sensitivity of glaciers to changing mass balances and the influence of the contribution of sliding and internal deformation to total ice flow on erosion rates.

In the latter case, we now explain in more detail why the inclusion of internal deformation in an erosion model might be important. And we will clarify why the original implementation of OpenLEM (Hergarten 2021) did not consider internal deformation.

Best regards,

Moritz Liebl on behalf of all co-Authors