

Earth Syst. Dynam. Discuss., editor comment EC1  
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## Comment on esd-2021-100

Michel Crucifix (Editor)

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Editor comment on "Dynamic regimes of the Greenland Ice Sheet emerging from interacting melt–elevation and glacial isostatic adjustment feedbacks" by Maria Zeitz et al., Earth Syst. Dynam. Discuss., <https://doi.org/10.5194/esd-2021-100-EC1>, 2022

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Dear authors,

After a (somewhat) long wait, the two reviews are in. What you show in your paper can, in my view, be called 'oscillations' (even if not perfectly periodic), and oscillations in glacial/isostatic systems are rare, though not quite unprecedented (Oerlemans, J. Glacial cycles and ice-sheet modelling. *Climate Change*, **4**, 353–374 (1982). <https://doi.org/10.1007/BF02423468>. The context was quite different, as well at the overall setup, but this old example suggests, as pointed out by reviewer 2, that assumptions involved in the lithosphere/asthenosphere model are crucial. I would therefore invite you to consider the possibility of sensitivity experiments that would address the question, though I would not be willing to substantially delay the publication of your study.