

Interactive comment on “The sensitivity of flowline models of tidewater glaciers to parameter uncertainty” by E. M. Enderlin et al.

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In Figure 2 of this paper initial stable profiles are shown. I suppose that with 'stable' the authors mean 'steady state' !? Anyway, around $x=90$ km the simulated surface elevation has a significant reversed slope over a distance of ~ 5 km. I wonder if such a feature has ever been observed. It implies that here the driving stress is upstream over many kilometers ! The authors should analyze this model result and show the force balance along the x -axis for this region in detail, and explain why the reversed surface slope is physically plausible. I suspect that we see an artefact of the way in which longitudinal stresses are dealt with in the model. Hopefully the authors can prove that I am wrong; otherwise the model is not very credible and the sensitivity study not valid.

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