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Supplement of

A rapidly converging initialisation method to simulate the present-day Greenland ice sheet using the GRISLI ice sheet model (version 1.3)

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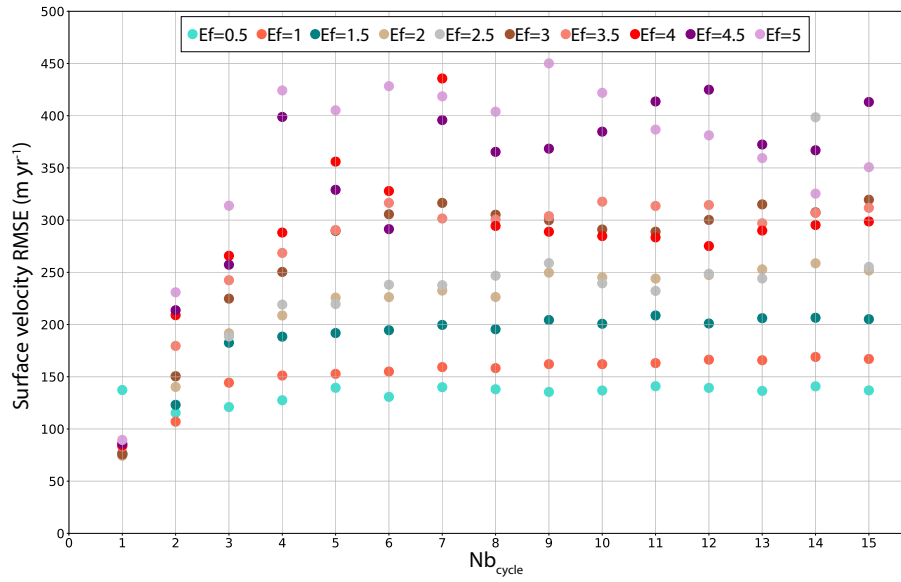


Figure S1. Surface velocity root mean square error w.r.t. observations from Joughin et al. (2018), in m yr^{-1} year for $\text{Nb}_{inv} = 20$, $\text{Nb}_{free} = 200$ and with enhancement factors (Ef) ranging from 0.5 to 5 as a function of the number of iterations (Nb_{cycle}).

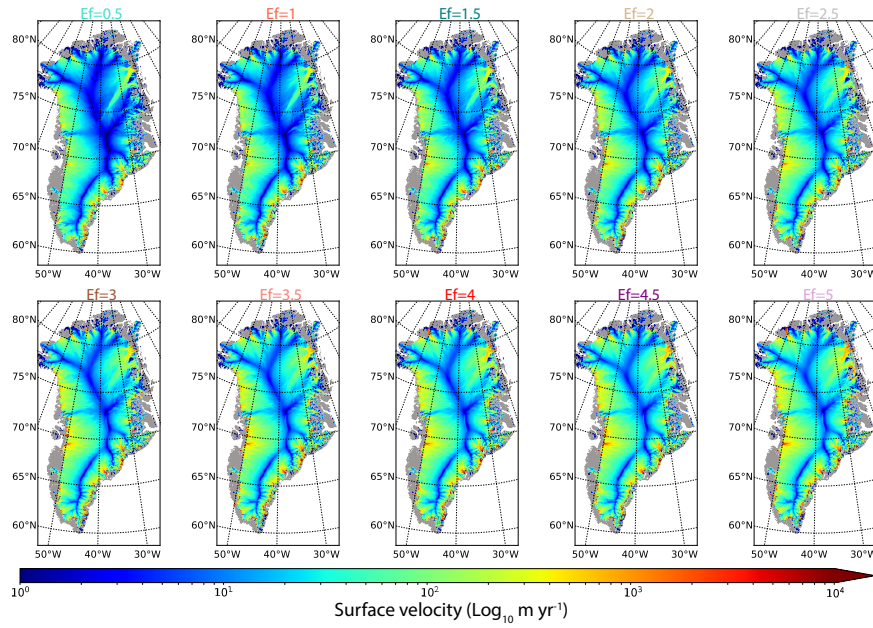


Figure S2. Simulated ice surface velocity (m yr^{-1}) using E_f ranging from 0.5 to 5 for $Nb_{inv} = 20$ yr, $Nb_{free} = 200$ yr and Nb_{cycle} that corresponds to the one producing the lowest ice thickness RMSE (see Tab. 1)

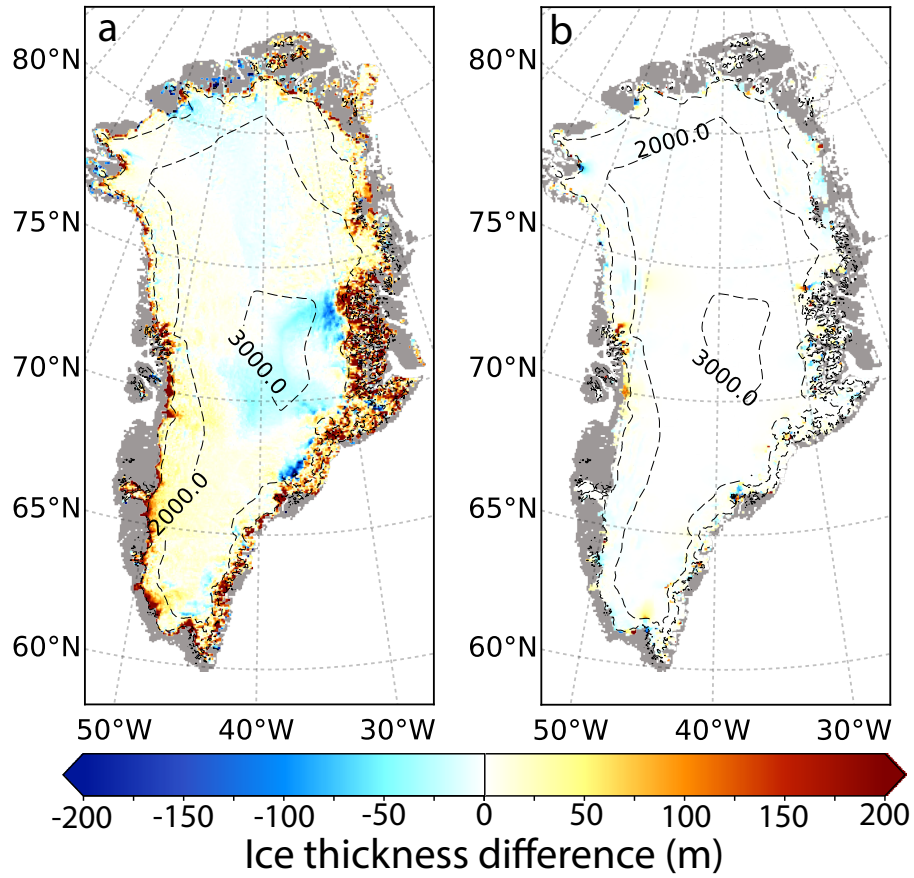


Figure S3. a/ Difference between the simulated ice thickness (obtained when starting from $\beta = 1$) and the observations (Bamber et al., 2013) in m. b/ Difference in simulated ice thickness obtained with $\beta = 1$ and β inferred from simulations carried out within the Ice2Sea project (Edwards et al., 2014) in m. These differences are provided for the set of parameters providing the lowest ice thickness RMSE ($Nb_{inv} = 20$, $Nb_{free} = 200$ and $Nb_{cycle} = 9$).

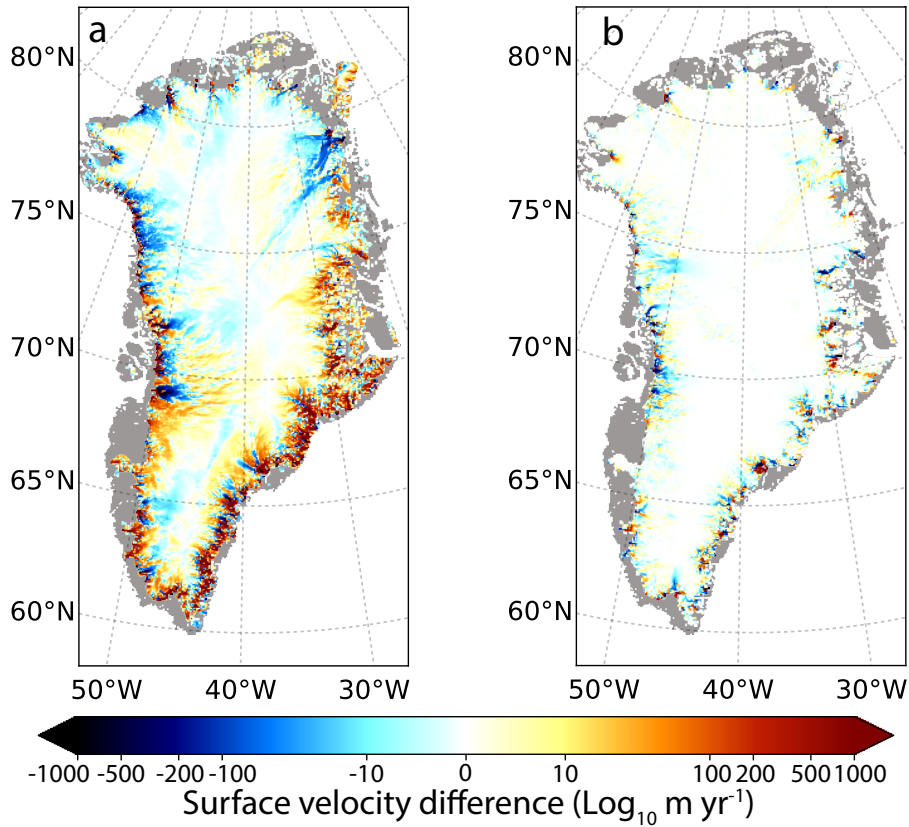


Figure S4. a/ Difference between the simulated surface velocity (obtained when starting from $\beta = 1$) and the observations (Joughin et al., 2018) in m yr^{-1} . b/ Difference in simulated surface ice velocity obtained with $\beta = 1$ and β inferred from simulations carried out within the Ice2Sea project (Edwards et al., 2014) in m. These differences are provided for the set of parameters providing the lowest ice thickness RMSE ($\text{Nb}_{inv} = 20$, $\text{Nb}_{free} = 200$ and $\text{Nb}_{cycle} = 9$).

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