

Bumpy beds, what to do about them

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Basal topography is one of the key factors controlling ice flow. Therefore, it is interesting to know how different models are able to simulate ice flow over bumpy beds. Comparison of a suite of numerical models demonstrates that solutions of the flowline model are dominated by large unphysical artifacts in both surface velocity and free-surface elevation when basal topography is strictly represented by the actual centerline basal topography profile. These simulations also show how well the basal topography needs to be resolved to make sure that the models perform well enough.