

Abstract Submitted
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Quantification of sensitivity of mountain glaciers to climate change with the use of a block model¹ EVIATAR BACH, University of British Columbia — Despite comprising a small fraction of the Earth’s total ice volume, melting of mountain glaciers due to climate change constitutes a significant contribution to sea level rise. Mathematical models of volume evolution of mountain glaciers are thus important in projecting sea level into the future. While state-of-the-art ice-flow models for glaciers exist, these rely on detailed data about the bed and surface of the glacier, data that is available for only a few glaciers worldwide. We derive and analyze a new model, extending previous work on a simple block model for glacier volume response to make it more physically realistic. We then apply it on a global scale with data from the Randolph Glacier Inventory in order to estimate the regional sensitivity of glaciers to climate change.

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