

Land Ice Modeling in Earth System Models

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Recent observations of increasing glacier and ice sheet (land ice) mass loss to the oceans has led to a concerted effort within the glaciology and modeling communities to improve the ability of land ice models to mimic and explain observed ice dynamical behaviors. These improvements include a more accurate and robust treatment of the governing equations for ice flow, better representations of previously simplified or idealized physical processes, and the coupling of land ice models to large-scale Earth System Models. This presentation will review and discuss recent efforts towards improvements in these three areas - dynamical cores, model physics, and model coupling – with a particular focus on the current state of and ongoing challenges in the coupling of land ice and Earth System Models.