**Towards a coupled, dynamic Greenland ice sheet in E3SM**

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Recent community efforts targeting the IPCC 6th assessment report estimate that the Greenland ice sheet will contribute 90 +/- 50 mm of globally averaged sea-level rise by 2100 under RCP 8.5. Here, we summarize recent E3SM and SciDAC supported efforts towards including a high-resolution, dynamic, Greenland ice sheet component in E3SM. These include the addition of new “IG” and “BG” compsets (data- and coupled atmosphere, respectively), substantial improvements to the ELM snowpack model (necessary for accurately simulating ice sheet surface mass balance, the primary source of climate forcing for Greenland), and the addition of a high-resolution Greenland ice sheet initial condition for the MALI ice sheet model. We also present some early results from coupled E3SM simulations using these new capabilities.