CGD SEMINAR

NCAR

DATE: Tuesday, 5 February 2019

TIME: 11 a.m.

LOCATION: NCAR, 1850 Table Mesa Drive
Mesa Lab, Main Seminar Room

TITLE: Progress in modeling ice sheets in the Community Earth System Model

SPEAKER: William Lipscomb, NCAR

ABSTRACT:

The representation of ice sheets in the Community Earth System Model (CESM) has steadily improved. CESM2, released in 2018, includes version 2 of the Community Ice Sheet Model (CISM), with more accurate ice sheet dynamics and more realistic physical processes such as basal sliding, grounding-line migration, and iceberg calving. CESM2 also supports interactive coupling of the Greenland ice sheet with the land and atmosphere. I will describe and evaluate Greenland simulations using CESM/CISM in both standalone and coupled configurations. Also, I will discuss recent work to support simulations of a dynamic Antarctic ice sheet and its interactions with the ocean. These modeling experiments will constitute the CESM contribution to the Ice Sheet Model Intercomparison Project for CMIP6 (ISMIP6). Relative to other published results, simulations to date suggest a mid-range sensitivity of ice sheets to climate change. Greenland's future mass balance will likely be dominated by increased surface ablation, whereas Antarctica is vulnerable to ocean warming beneath floating ice shelves that buttress vast areas of grounded marine-based ice.

Live webcast: http://ucarconnect.ucar.edu/live

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