EGU2020-11667
https://doi.org/10.5194/egusphere-egu2020-11667
EGU General Assembly 2020

Contrasting contributions to future sea level under CMIP5 and CMIP6 scenarios from the Greenland and Antarctic ice sheets

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Projections of sea level contribution from the Greenland and Antarctic ice sheets rely on atmospheric and oceanic drivers obtained from climate models. The Earth System Models participating in the Coupled Model Intercomparison Project phase 6 (CMIP6) generally project greater future warming compared to the previous CMIP5 effort. Here we use four CMIP6 models and a selection of CMIP5 models under two future climate scenarios to force multiple ice sheet models as part of the Ice Sheet Model Intercomparison Project for CMIP6 (ISMIP6). We find that the projected sea level contribution at 2100 from the multi ice sheet models under the CMIP6 scenarios falls within the CMIP5 range for the Antarctic ice sheet but is significantly increased for the Greenland ice sheet.

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