



Science Question:

How is the Antarctic ice sheet going to evolve over the next century? How do model ice sheet parameters and initial conditions impact this evolution? What is the impact of changes in atmospheric and oceanic conditions?

Data & Results:

- Comparison of 25 simulations from 16 international modeling groups
- Significant improvement compared to previous intercomparisons
- Agreement in the response to changes in atmospheric conditions
- Large discrepancy in response to changes in ocean conditions, in part due to different basal melt rates

Significance:

- ISMIP6 is the primary activity of CMIP6 focused on polar ice sheets
- Improvement of ice sheet model simulations over the past 5 years, but need to better represent ice shelves and ice shelf basal melt parameterizations in ice sheet models

Antarctic contribution to sea level from 25 simulations (mm of sea level equivalent) for (a) the control experiment, (b) the difference between surface mass balance anomaly and control experiments, and (c) difference between ice shelf melt anomaly and control experiments. Negative values of sea level represent a growing ice sheet. Note the large spread in (c) compared to (b).

Seroussi, H., S. Nowicki et al. : initMIP-Antarctica: an ice sheet model initialization experiment of ISMIP6, *The Cryosphere*, 13, 1441-1471, <https://doi.org/10.5194/tc-13-1441-2019>, 2019.

More information on ISMIP6: <http://www.climate-cryosphere.org/activities/targeted/ismip6>

