



initMIP-Antarctica: An ice sheet model initialization experiment of ISMIP6

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ISMIP6 (Ice Sheet Model Intercomparison Project for CMIP6) is the primary activity within the Coupled Model Intercomparison Project – phase 6 (CMIP6) focusing on the Greenland and Antarctic Ice Sheets. Ice sheet model simulations are strongly influenced by their initial conditions, but the impact of these conditions on simulations of ice sheet evolution over the next couple centuries remains poorly understood. To better understand this impact and the associated error, an initial intercomparison exercise (initMIP) has been designed to compare, evaluate and improve initialization procedures and estimate their impact on century scale simulations. Following the initMIP-Greenland, a new initMIP-Antarctica has been designed to explore uncertainty associated with model initialization and spin-up and to evaluate initialization procedures. It consists of a set of three forward experiments of the Antarctic Ice Sheet that are each run for one hundred years: i) a control run (ctrl), ii) a surface mass balance anomaly run (asmb) and iii) a basal melt anomaly applied under the floating ice 30 (abmb) of the Antarctic Ice Sheet. All other model parameters are the same as those used for the initialization procedure. In this study, we present the first results of initMIP-Antarctica performed by different modeling groups and highlight the similarities and differences observed in the different simulations.