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PISM paleo simulations of the Antarctic Ice Sheet over the last two glacial cycles

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Simulations of the glacial-interglacial history of the Antarctic Ice Sheet provide insights into dynamic threshold behavior and estimates of the ice sheet's contributions to global sea-level changes, for the past, present and future. However, boundary conditions are weakly constrained, in particular at the interface of the ice-sheet and the bedrock. We use the Parallel Ice Sheet Model (PISM) to investigate the dynamic effects of different choices of input data and of various parameterizations on the sea-level relevant ice volume. We evaluate the model's transient sensitivity to corresponding parameter choices and to different boundary conditions over the last two glacial cycles and provide estimates of involved uncertainties. We also present isolated and combined effects of climate and sea-level forcing on glacial time scales.