



## **Hysteresis behaviour of the Antarctic Ice Sheet with the Parallel Ice Sheet Model**

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Ice sheets are believed to exhibit a multi-stable hysteresis behaviour in response to regional surface temperature changes. This implies the possibility of irreversible changes in the climate-cryosphere system under ongoing global warming. Being the by far largest potential source of future sea-level rise, the Antarctic Ice Sheet holds a freshwater volume sufficient to raise the mean elevation of the global oceans by nearly 60 metres with high relevance for coastal populations and ecosystems on centennial and millennial time scales.

Here we present hysteresis experiments of the Antarctic Ice Sheet for the first time with the thermodynamically coupled shallow-ice Parallel Ice Sheet Model (PISM, [www.pism-docs.org](http://www.pism-docs.org)).