



## **Response of marine-based sectors of the Northern Hemisphere ice sheets during the last glacial cycle**

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How the marine-based sectors of the Antarctic ice sheet will respond to climate change is one of the largest sources of uncertainty for future sea level estimates. There are a number of instability mechanisms that have been proposed that could lead to rapid retreat of the Antarctic ice sheet in a warmer world. Here we explore how marine-based sectors of the Northern Hemisphere ice sheets responded during the last glacial cycle using simulations with a hybrid SIA-SSA model that has been used extensively for both paleo and future simulations. Of particular interest is how successfully this model can simulate formation and retreat of marine-based ice sheets, such as the Barents Sea ice sheet and the British-Irish ice sheet. We also explore the controversial suggestion that there was expansion of Arctic ice shelves during earlier glacial stages.