KlimaCampus Kolloquium

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at the Invitation of the Institute of Oceanography of Universität Hamburg

Assessing the Future Sea Level Contributions of the Antarctic Ice Sheet: Modelling Challenges and Potential Solutions

The West Antarctic ice sheet (as well as parts of East Antarctica) have long been thought susceptible to dynamical change triggered by the inland migration of the grounding line separating ice grounded on bedrock from floating ice shelves. It is, however, unclear how this general concept relates to potential contributions from the ice sheet to future sea-level rise over the next century, and there are very significant challenges in applying numerical models to the system. Evidence suggesting a close coupling between ice shelves and grounded ice caused the IPCC AR4 to explicitly omit ice dynamics from its projections of sea level rise. Here we summarise results from the EU-funded ice2sea project and, in particular, large-scale numerical modelling of the changing ice flow in West Antarctica using a numerical model based on adaptive-mesh refinement.

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