ABSTRACTS

**Understanding ice discharge pulses from Antarctica during the last deglaciation with the Parallel Ice Sheet Model (PISM)**

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Understanding the dynamics of past and current ice discharge from Antarctica is a crucial task for the scientific community, in order to estimate future contributions to global sea-level rise. Large portions of the Antarctic Ice Sheet, where the ice rests on inland-sloping ground, are inherently unstable (Marine Ice Sheet Instability Hypothesis). The floating ice shelves buttress and hence stabilize the ice flow towards the ocean, while at the same time eroded by the warming ocean and atmosphere. Fracture formation strongly reduces the mechanical integrity of the ice body and can potentially amplify the disintegration process. The Parallel Ice Sheet Model (PISM) provides the means to represent the most relevant processes that can produce rapid discharge pulses, as frequently observed in the last deglaciation period (Weber et al., 2012). We will perform an ensemble of model simulations of the entire Antarctic Ice Sheet covering the last four glacial cycles (400kyr) that incorporates uncertainties from climate boundary conditions, internal process-modeling and ice parameter choices constrained by paleoclimatic data and present-day observations. On this basis we want to investigate self-enforced ice discharge events in the past (20kyr) and their likelihood for future sea-level rise.

**10Be remote sensing of the ice/rock/regolith interface under the Greenland Ice Sheet**

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10-Be, both that produced in rock and regolith and that produced in the atmosphere and delivered by precipitation, can be used to better constrain processes at the base of ice sheets. For example, Be isotopic analysis of a 10 My marine sediment core reveals both the history of the Greenland ice sheet over time as well as changing basal conditions. Silty ice at the bottom of the GISP2 core preserves high concentrations of 10-Be, an ancient soil, indicative of long-lived cold-based ice. Outcrops around the margin of the ice sheet have widely varying 10-Be content, indication changing basal thermal conditions over time and space.