

Future tipping points of ice-sheets on Earth

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Storing approximately 65 m sea-level equivalent, the ice-sheets on Greenland and Antarctica are by far the largest potential source of future sea-level rise. While massive in size, they also belong to the most vulnerable parts of the Earth System: Both ice-sheets are subject to several positive feedback mechanisms, which could lead to critical threshold behavior and possibly irreversible ice loss from their drainage basins. This talk will review the current understanding of the processes behind these dynamic instabilities, discuss possible future tipping points of both ice-sheets and the implications for global sea-level rise, and explore how the interaction of these crucial Earth system components could affect the likelihood, timing and impacts of their tipping.