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DISSERTATION TITLE:	*Current status and past evolution of ice rises in Dronning Maud Land, Antarctica*

Ice rises are locally grounded and elevated features surrounded by floating ice shelves. They help regulate the outflow of ice from the Antarctic Ice Sheet, besides, holding past climate information within their ice stratigraphy. This thesis provides an improved understanding of the ice rises in Dronning Maud Land (DML), a lesser studied region in Antarctica.

A detailed case study of Blåskimen Island ice rise was carried out by conducting fieldwork to collect a range of ground-based geophysical data and analyzing them. The largely dome-shaped ice rise was found to be thickening by about 0.3 m per year since the past few decades. The surface mass balance (SMB, net snow deposited per year) distribution over the ice rise shows signs of strong topographic effect. The stratigraphy within the ice rise imaged using ice-penetrating radar showed signs of long-term stability of the ice rise. Further interpretation of this stratigraphy using ice-flow modelling show that over the past millennia the SMB distribution has been gradually changing, while the ice rise retained its shape. It was inferred that these SMB changes are likely a result of synoptic-scale atmospheric changes, rather than changes in local ice topography.

Lastly, characteristics of ice rises and ice shelves in DML were investigated. New analysis using region-wide datasets showed that large parts of DML have been undergoing changes over the past several millennia. This knowledge was synthesized with other existing findings to identify key directions for future research in the region, highlighting ice rises that should be investigated next.