



TRACING EXTREME EVENTS FROM THE OCEAN TO THE SURFACE OF THE ANTARCTIC ICE SHEET

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Most of the world's fresh water is held within the Antarctic and Greenland ice sheets, and future warming has the potential to accelerate ice loss and therefore sea level rise. The focus of this talk will be tracing extremes from sources of moisture over the ocean to impacts over the ice sheet surface using multiple tools, including variable-resolution earth systems models and multi-source satellite-based remote sensing. To elucidate the drivers and impacts of extreme events, I'll discuss recent earth systems modeling work over Antarctica within the context of three major extreme events:

- (1) Surface melt produced by foehn winds over the Larsen C ice shelf in winter, 2016
- (2) Supraglacial lakes over an intense summer melt season, 2019
- (3) Changing conditions of the Antarctic Ice Sheet and Southern Ocean which are accelerating right now.