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## Iceberg meltwater intrusions observed in Sermilik Fjord, Southeast Greenland

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As much as half of the freshwater flux from the Greenland Ice Sheet enters the ocean through calving of icebergs into glacial fjords. Remote sensing studies have shown that substantial iceberg melt occurs within fjords, and models indicate that the resulting heat and freshwater fluxes affect fjord circulation and the properties of waters reaching the glacier terminus. Observations are needed to evaluate whether these models accurately represent the distribution of iceberg melt.

Repeat oceanographic surveys around a large iceberg in Sermilik Fjord show anomalously cold, fresh layers consistent with the expected properties of submarine ice melt. We interpret these features as intrusions of iceberg melt and characterize their properties and vertical distribution. We find that iceberg melt drives significant upwelling, with the vertical scale set by the ambient stratification, as predicted by theory and numerical simulations. Our results agree with recent studies suggesting that the typical melt parameterization likely underestimates melt rates in this setting.