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## Turbulence Observations in the Grounding Zone Region of Thwaites Glacier

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Antarctic ice shelves restrain the flow of grounded ice into the ocean, and are thus an important control on Antarctica's contribution to global sea level rise. West Antarctica represents the largest source of uncertainty in future sea level projections, and Thwaites Glacier has the potential to influence sea level more than any other outlet glacier in this region. The future behaviour of Thwaites Glacier is particularly sensitive to basal melting in the grounding zone region. Basal melting is controlled by the turbulent transfer of heat through the ice shelf-ocean boundary layer. The physics of this boundary layer is poorly understood, however, and its inadequate representation in numerical models is hampering our ability to predict the future evolution of the Antarctic ice sheet. Using a hot-water drilled access hole, a turbulence instrument cluster was deployed in the grounding zone region of Thwaites Glacier in January 2020. By observing the momentum and scalar fluxes, these observations provide a unique opportunity to explore the important turbulent processes responsible for modulating the basal melt rate in this region. Ultimately, this observational effort will allow us to better constrain our parameterisations of the grounding zone region in large-scale numerical models, facilitating more accurate simulations of the Antarctic ice sheet in the changing climate.