



The NIU Ice Borehole ROV – Update Report on a new Tool for Subglacial Research

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Subglacial environments play a key role in the dynamics of ice sheets, provide a unique habitat for life, and hold paleoclimatic and paleo-environmental records. Covered by up to several kilometers of ice, subglacial environments are one of the last uncharted and unexplored areas on Earth and the exploration of these environments requires the development of a number of new instrumentation.

Here we present an update report on the development of a Remote-Operated under-water Vehicle (ROV), suitable to be deployed through boreholes drilled to the bottom of the ice sheet. The ice borehole ROV will enable gaining a better understanding of hydrological and sedimentary processes and records in the sub ice shelf cavity and subglacial lakes. The NIU-ice borehole ROV is currently in the final assembly stage with testing scheduled to begin in mid February. The NIU ice borehole ROV is equipped with live stream video and multi beam sea floor imaging system, high resolution acoustic bottom sounder. Oceanographic instrumentation like CTD and acoustic doppler current meter, sampling capabilities for sediment, water and ice as well as biological specimen. With its 2 or 3 km long tether the vehicle provides live stream high resolution imagery, bathymetry and oceanographic data to the command center at the ice surface.