

Team Deploys Aquadopp with Inductive Modem Through Ross Ice Shelf

Researchers from WHOI, NIWA and Victoria University (NZ) get real-time velocity data from five Nortek Aquadopp Current Meters with integrated inductive modems deployed through 275 m of ice in Antarctica.



WHOI researcher in Antarctica

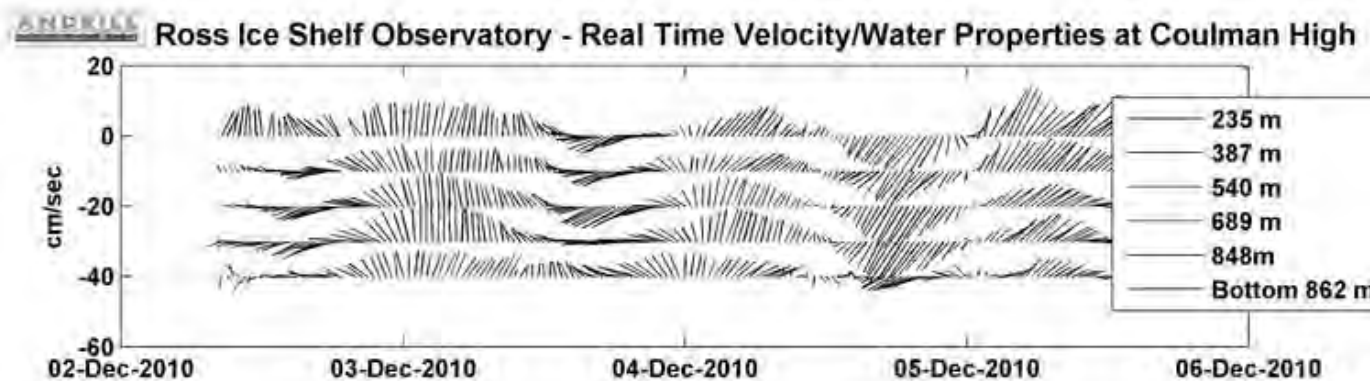
Real-time current velocity data from the water below the 275 m Ross Ice Shelf are available from the ANDRILL project. The data are available via Nortek Aquadopp Current Meters with integrated inductive modems.

The Woods Hole Oceanographic Institution (WHOI) research program located at the Coulman High region of the Ross Ice Shelf in Antarctica is primarily intended to support the operational needs of the NSF sponsored ANTarctic geological DRILLing (ANDRILL) program by measuring currents under the Ross Ice Shelf. The Ross Ice Shelf field program presents a valuable opportunity to investigate processes under the ice shelf. In particular WHOI will focus on the following aims:

- Assess the tidal, seasonal and interannual variability of the water column structure and transport across the ice front, including influences on and response to ice shelf basal melt, sea ice formation and variability of the Ross Sea Polynya;
- Characterise the under-ice-shelf boundary layer, the heat transport across this layer, and scales of vertical mixing throughout the water column.

Two current meter moorings were deployed on November 24 and December 1, 2010 through the Ross Ice Shelf by Richard Limeburner and Will Ostrom (WHOI), Craig Stewart (National Institute of Water and Atmospheric Research, NIWA), and Sanne Maas (Victoria University, Wellington, NZ). The WHOI mooring is located at the Coulman High site at 77° 26.211'S, 171° 32.391'E, approximately 70 nautical miles east northeast of McMurdo Station, Antarctica. The mooring sites are normally covered with 300 m of ice. Nortek Aquadopp and SeaBird Microcat inductive modem instruments were placed at 5 levels below the ice shelf and a surface inductive modem logger and Iridium satellite communication package were installed on the ice surface of the WHOI mooring. The mooring is planned to be recovered in January 2013. The edited real time moored data is presented here and a full analysis will be done in 2011.

Engineers from Woods Hole Group Inc developed and tested the surface inductive modem package with data logger, Iridium communications package and self-contained internal heater to keep the system functional in temperatures expected to drop below -40 deg C.



Full details are available on the WHOI website.