

## **ACOUSTICS2008/270**

### **An autonomous moored ocean profiler**

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An unconventional set of environmental and acoustic data, measured from an autonomous moored ocean profiler, is presented. The profiler is a programmable robotic underwater winch and data acquisition system that cycles vertically through the water column. The system profiles at pre-determined time intervals, surfaces to transmit data via RF links, and can be deployed for up to 180 days. Built by WETLabs Incorporated (Western Environmental Technology Laboratories) for the Naval Underwater Systems Center (NUWC), the system is outfitted with three environmental sensors and two acoustic vector sensors. The environmental sensors include; a Nortek Vector velocimeter which samples current components and characterizes surface wave velocities, a Seabird FastCAT Conductivity, Temperature, Depth (CTD) sensor; and a Wetlabs Fluorometer-Turbidity optical sensor that measures both chlorophyll-a and turbidity. The Wilcoxon acoustic vector sensors measure acoustic pressure and the three components of acoustic particle acceleration. Wilcoxon Research (a subsidiary of Meggitt Corporation) and Applied Physical Sciences (APS) have developed underwater acoustic vector sensors for many applications. The quality and sensitivity of these vector sensors has steadily improved. A review of early (pre-2002) vector sensor development efforts is discussed.