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## Nortek's New Profiling Acoustic Doppler Velocimeter: The Vetrino II

The product of countless hours of research, development, and testing has been realized in Nortek's newest product, which revolutionizes acoustic velocity measurements in the laboratory and field. The Vetrino II will soon be available to researchers and will feature the ability to profile the water column over a 3 cm range, providing three-component velocity observations with a resolution as fine as 1 mm and sampling rate as fast as 100 Hz. The new velocimeter will measure distance to the bottom at rates of up to 10 Hz by interleaving bottom detection pings and velocity profile pings. The instrument will maintain the same design as the original single point Vetrino, enabling researchers to use existing mounting apparatus. Along with new hardware and firmware, Nortek will introduce completely new software, which provides enhanced capabilities such as real-time plots of velocity profiles, velocity standard deviation, energy spectra and color contour plots. The Vetrino II, like its predecessor, will be available with the probe mounted on either a fixed stem or flexible cable. Nortek has sold the instrument to several beta users, some of which presented their work at the March 2011 NortekUSA Technical Symposium. These presentations by [Craig Hill \(St. Anthony Falls Lab\)](#), [Bernard Long \(University of Quebec\)](#), [Daniel Wren \(USDA\)](#), [Peter Rusello \(Cornell\)](#), and [Jack Puleo \(University of Delaware\)](#) may be viewed on the NortekUSA website. Initial publications, including ["Turbulence measurements in a jet: comparing the Vetrino and Vetrino II"](#) (Zedel and Hay) and ["Characterization and Testing of a new Bistatic Profiling Acoustic Doppler Velocimeter: The Vetrino-II"](#) (Craig, Loadman, Clement, Rusello, Siegel) are also available. Production delivery will begin in August 2011. Product webpage and informational materials are forthcoming, but in the meantime, please [contact your local Nortek representative](#) for details.

## **Fatigue Monitoring with Nortek and CDL**

Nortek is pleased to announce the integration of the CDL Minisense2 (MS2) 6 DOF motion sensor with the [Vector Velocimeter](#). The MiniSense2 can provide HPR, 3D linear and 3D rotational accelerations at sampling rates as high as 50 Hz and is conveniently fitted in the Vector pressure housing. Nortek offers the Vector velocimeter capable of 64 Hz sampling for users interested in turbulence level sampling of ocean currents. The MiniSense2 option is completely configurable via a single user interface with data strings fully synchronized. Real-time telemetry and autonomous logging options are available. Future plans may include integration with the [Aquadopp Current Meter](#) and the [Aquadopp Current Profiler](#). If you are interested in adding this option to your Vector velocimeter, please [contact your local Nortek representative](#).



# Port of Altamira

## AWAC Online System Installation



Nortek is proud to announce a new online system for Altamira Port, in Tamaulipas State, Mexico. Located on the Gulf of Mexico, this deep-water port is Mexico's most important commercial center for petrochemicals. With over three thousand hectares open for development, it has become the country's gateway for chemical products. The heart of the online system is a Nortek Acoustic Wave and Current (AWAC) sensor with ProLog internal wave data processor and logger. The system will use acoustic modems, a buoy and radio telemetry to transmit data. This kind of system is new for Mexican Ports and it will be installed in the coming months. The AWAC will provide useful real time wave & currents data to aid in navigation at the port. Look forward to more information about the system over the next few months.

## Upcoming Events...

### Energy Ocean International 2011

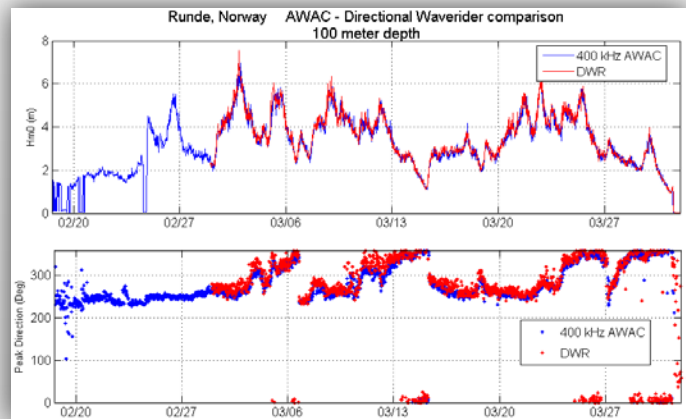
14-16 June 2011

Portland, Maine

### Physical Processes in Natural Waters

11-14 June 2011

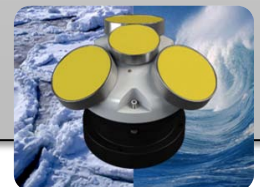
Burlington, Ontario



## AWAC 400 kHz

### Runde Deployment Test Data

This past March, a Nortek 400 kHz AWAC was deployed for 31 days off the coast of Norway, 2 nautical miles to the west of Runde in a depth of 100m. A Datawell Waverider buoy was co-located as an independent reference instrument for wave energy and wave direction estimates. The AWAC samples at 0.75 Hz (1.5 Hz AST) and has 1024 samples per burst (2048 AST), providing wave bursts over 22 minutes in length. The Waverider (DWR) sampled for a duration of over 26 minutes. Both instruments took measurements twice each hour. The wave conditions were highly energetic, with significant wave height often greater than 4m. The figure above presents a comparison of wave heights and peak direction between the two instruments. The comparison test showed particularly favorable agreement for wave heights as well as good agreement in peak direction. Nortek was pleased to see an extremely low number of bad AST detects along with capturing waves as short as 2 seconds at this 100m depth. Performance of the new 400 kHz AWAC represents a significant milestone for subsurface wave measurements.



CURRENT AND WAVE MEASUREMENTS IN THE OCEAN, LAKE AND LABORATORY



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