



In this issue...

New DVL for PUMA Ocean Racing Team	1
Forward-Looking Doppler Profilers for MHK Applications	2
University of Quebec's New Wave Flume	2
NortekUSA Welcomes PJ Rusello	2
Nortek Happy Hour at AGU Fall Meeting	2
NortekUSA Student Equipment Grant Competition	2



New DVL for PUMA Ocean Racing Team

The 2011-2012 Volvo Ocean Race is well underway and Puma's Mar Mostro was the first to cross the Equator last week with none other than a custom designed Nortek DVL in its keel. Nortek collaborated with the PUMA Ocean Racing team to develop a modified compact Doppler Velocity Log (DVL) for PUMA's Mar Mostro Volvo Open 70 yacht competing in the race. The project, which was completed over the course of the past year, has resulted in the successful integration of boat speed, leeway and in-situ ocean current readings. Translation: a secret weapon in the battle to go as fast and efficiently as possible!



Nortek DVL installed in keel of Puma's Mar Mostro. Photo courtesy of PUMA Ocean Racing Team, Alicante.

The objective of this collaboration was to measure boat speed in a new, advanced way. The expectation behind this effort was not only to provide a sensor that could improve on boat speed measurements but also to directly estimate leeway – a first for performance yacht racing. A by-product of correct through-the-water boat velocity is real time estimates of the ocean currents.



A beautiful sunset under fast sailing conditions. PUMA Ocean Racing powered by BERG during leg 1 of the Volvo Ocean Race 2011-12, from Alicante, Spain to Cape Town, South Africa. Photo courtesy of: Amory Ross/PUMA Ocean Racing/Volvo Ocean Race.

The collaboration effort between PUMA's technical team and Nortek was one that saw several iterations to solve all the challenges. These included mounting solutions, onboard software development, high speed sensor performance, drag elimination, flow characterization, and countless hours of testing. The patience and hard work from both sides is a testament their will to succeed.

Nortek expects that migrating away from decades old paddlewheel technology will prove beneficial for the Volvo Ocean Race. We at Nortek wish PUMA Ocean Racing a swift journey to claim victory in the Volvo Ocean Race.

Please visit our website for all the juicy technical details. Tell us what you think! The new DVL has been featured in Wired Magazine and on Sailing Anarchy. We would like to hear your comments on our Facebook Page.

Nortek Partners with ORPC and UNH to Explore Forward-Looking Doppler Profilers

Nortek has partnered with Ocean Renewable Power Company (ORPC) and the University of New Hampshire (UNH) to study the use of forward-looking Nortek Aquadopp Profilers in collecting measurements of the water speed and variability well upstream of a marine hydrokinetic turbine. Observations of the flow in advance of interaction with the turbine aid in structural analysis, power generation analysis and turbine control. These have been mounted to an ORPC tidal turbine and a UNH test turbine in a variety of studies at R&D sites in Maine and New Hampshire. The Aquadopp Profilers were configured with a custom transducer geometry that allows forward-Looking (upstream) measurements to be made on both the flood and ebb tides using a single instrument. Check out the full article on our website for the details and a sample of the data set.

Aquadopp Profiler Mounted on UNH Test Turbine



New-"ish" Face at Nortek

Nortek Forum "poster-child" extraordinaire, P.J. Rusello, joined NortekUSA full time this fall after completing his PhD at Cornell University in Civil Engineering. His research focused on the bottom boundary layer in lakes and reservoirs, sediment transport, and turbulence

measurements with acoustic systems. He comes to us with several years experience using pulse coherent instruments like the HR Profiler, Vector and the Vectrino I and II. He will be working on analysis methods for measurements from moving platforms like the iRobot Seaglider and developing a Matlab toolbox for the Vectrino II.

PJ enjoys padding outrigger canoes and stand up paddleboards (SUP). Stop by the Boston office (in the warmer months) and he'll be happy to take you out for a SUP excursion. After many years in central New York, P.J. is enjoying Boston, but thinks the best part of his position is the chance to interact with customers and help them with their own research and measurement needs. He also has plans for a Vectrino II based coffee brewing system. Be on the lookout for Pulse Coherent Coffee in Fall 2012.

University of Quebec New Wave Flume

November 4th was an exciting day as the University of Quebec INRS-ETE celebrated the opening of their new 120m long wave flume. The new flume is well-equipped with a state-of-the art wave maker and a number of Vectrino single point velocimeters, Vectrino II profiling velocimeters, and Aquadopp HR Profilers. The facility was developed to inspire international collaborative projects, so you should contact INRS-ETE to discuss flume availability. Nortek staff traveled to Quebec City to celebrate the inauguration of the flume and provide on-site training for the Vectrino II. Read the full article on our website and view YouTube video of two Vectrino IIs being used in a small wave flume with sloped sandy bottom.



Flume Inauguration in Quebec City.

Nortek Meet & Greet at the AGU FALL MEETING 2011

San Francisco, California, USA | 5-9 December

Once again, the NortekUSA team will all be attending the AGU Fall Meeting. Come and join us for a casual Happy Hour:

Thirsty Bear Restaurant & Brewery

(1 block from conference center)

Wednesday, 7 December, 5-7 PM

We look forward to seeing you all there!



Students!

We hope you are busy contemplating this year's Student Equipment Grant Competition! Proposals are due by midnight on **1 Feb 2012!!**



Please visit the 2012 Student Equipment Grant Competition page on our website good luck!

CURRENT AND WAVE MEASUREMENTS IN THE OCEAN, LAKE AND LABORATORY



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