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Current Meter: Marotte HS



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Instrument Features

Simple To Use

Just insert the SD card and turn the power switch on and logging begins. No more wondering whether the instrument has been launched properly.

Improved Tilt Sensor

The tilt sensor uses both an accelerometer (tilt) and magnetometer (compass) enabling accurate direction measurements without needing to know the orientation of the device when deployed.

Tough ABS Enclosure

The injection moulded enclosure improves sensitivity at low speeds while reducing vortex



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Large Storage Capacity

Data are recorded on an 8GB Micro SD card.

Compromising on deployment length or sampling rate is no longer necessary. Five to six month deployments at 1Hz are no problem.

Efficient Power Supply

The instrument is powered using two standard Alkaline AA batteries, and no charging or expensive replacement is required. Due to an efficient power supply, the instrument can operate at 1Hz sampling for five to six months at on a single set of batteries.



Applications

Local Hydrodynamics at Coral Reefs

The affordable and easy-to-deploy Marotte HS is particularly well suited to high spatial density

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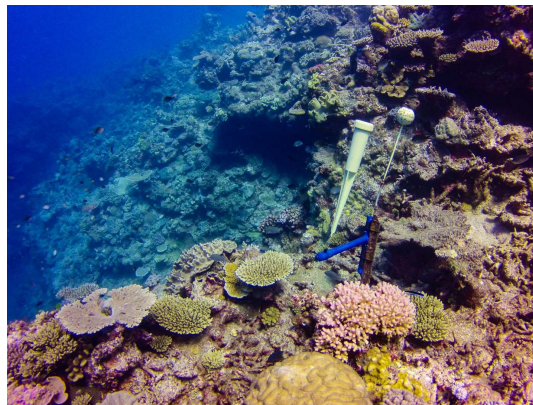
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research investigates relationships between reef hydrodynamics and fish aggregations. Follow this link (http://www.reefmagiceducation.com/?page_id=119) to read more about Eric Fisher's research.



Aquaculture

The Marotte HS is currently being used in marine aquaculture operations in Fiji, Kiribati and Samoa to study small scale hydrodynamics at seaweed farming and fishing locations. Working for the Joint ACIAR (Australian centre for international agricultural research) and JCU (James cook university) diversification of Seaweed Industries in Pacific Island Countries project, marine Scientist Ian Tuart is training local fisheries staff and researchers in the use of the Marotte HS at multiple locations around extensive marine aquaculture seaweed farming sites and traditional seaweed fishery sites. The current speed and direction data collected by the Marotte HS has been logged continuously at some sites for more than 1.5



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large changes in production levels. Follow these links (MACRO – the Centre for Macroalgae Resources & Biotechnology (<https://research.jcu.edu.au/macro>), Diversification of seaweed industries in Pacific Island countries (<http://aci.gov.au/project/fis/2010/098>)) for more detailed information.



Environmental Monitoring of River Flows

Using costly oceanographic equipment for studies of small creeks and estuarine rivers can be particularly concerning to researchers and consultants on tight budgets. The high volume recreational traffic in these narrow waterways make it difficult to establish a secure mooring for a logging instrument.

Environmental consultants have used the Marotte HS as part of an environmental impact assessment for projects in the Solomon Islands. A re-purposed brake-drum mooring together with a single Marotte HS certainly presents a less risky alternative to traditional equipment in this environment.

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HS current meters together with other low-cost marine sensors to teach students the power of instrumentation in research and the understanding environmental dynamics.

Example Data

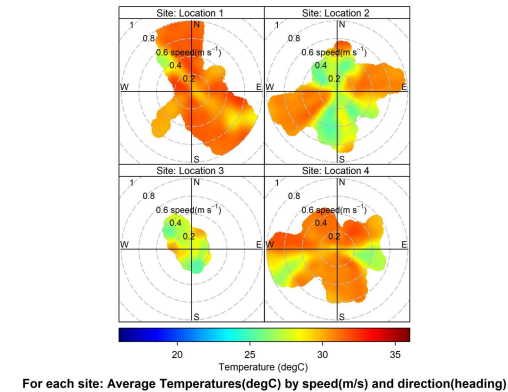
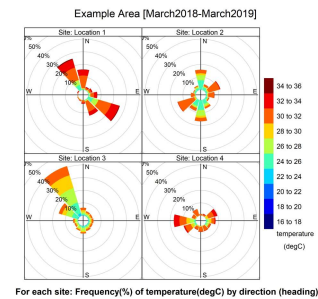
The raw data collected with the Marotte HS is first processed using MGL's custom software to calculate water speed and direction values and perform some smoothing to reduce the file size. Further processing of the data may be performed with Excel, R, MATLAB (or other software) to generate easy-to-read plots of time-series current data and to extract wave spectrum information from the current meter signal. The top 2 images below represent datasets collected at Moore Reef, Australia and were generated using the MATLAB scripts available for download [here](http://www.marinegeophysics.com.au/software/) (<http://www.marinegeophysics.com.au/software/>). The last 2 images of "rose plots" represent random example data and are generated using the new R scripts available for download [here](http://www.marinegeophysics.com.au/software/) (<http://www.marinegeophysics.com.au/software/>). The first image shows how the current speed and direction varies with time with the variations in direction being shown as different colours. The second image shows the wave spectrum plotted on a 2D colour plot with the most dominant wave periods shown as dark red and least dominate wave periods as blue.

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Pricing and Shipping Information

Our instruments are designed and manufactured in Townsville, Australia and all goods ship from here. Our pricing schedule is printed below with larger orders attracting significant discounts. All prices are quoted in Australian Dollars and do not include Australia's Goods and Services Tax (GST). International customers are








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per instrument	per instrument	per instrument	per instrument	per instrument
6 x Marotte HS	7 x Marotte HS	8 x Marotte HS	9 x Marotte HS	10 x Marotte HS
A\$800	A\$770	A\$740	A\$710	A\$650
per instrument	per instrument	per instrument	per instrument	per instrument

Service and Repairs

We also offer instrument service and repairs, such as fixing battery corrosion, re-calibration, replacement of damaged housings and anti-foul painting.

Contact us for a formal quote and consultation

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**Please be aware that the Marine Geophysics Laboratory is not responsible for import taxes, duties, or permits that may be required for purchases outside of Australia.*

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