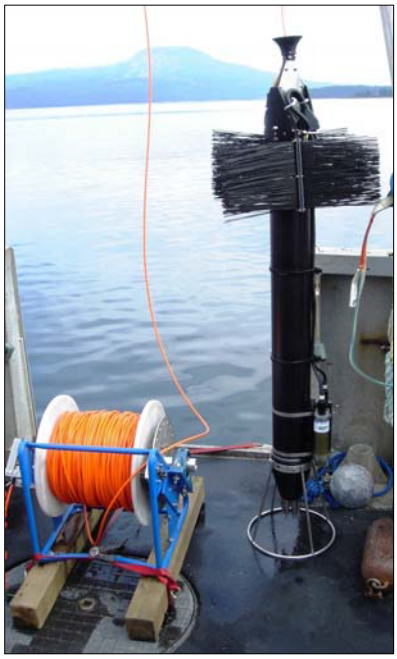
VMP 500

Coastal Vertical Microstructure Profiler

Description:

The VMP500 is a vertical microstructure turbulence profiler for the measurement of dissipation-scale turbulence in oceans and lakes up to 1000 m depth. It is equipped with state-of-art microstructure velocity probes (shear probes), high-resolution temperature sensors (thermistors), and high-accuracy CTD sensors. Light and usable from small vessels and boats.



Features:

- Pressure case rated to 1000 m depth (optional 2000m)
- Pressure sensor
- Three-axis, high-accuracy accelerometers
- SPM-6000 shear probes
- FP07-1000 fast thermistors
- SBE7-6000 microstructure conductivity sensor*
- SBE-3F / SBE-4C temperature and conductivity sensors*
- Bottom landing guard
- Signal conditioning and telemetry electronics
- Real-time data transmission or internal recording
- Data acquisition software
- Processing library for Matlab
- Training in Victoria

Specifications:

Sampling rate	up to 2048 Hz (standard 512 Hz)
Depth rating	0 – 2000 m (standard 1000 m)
Weight (in air)	19.5 kg (26.7 kg with SBE3/4 sensors)
Length overall	165 cm

Velocity shear

Range	0 - 10 s^{-1}
Accuracy	5%
Resolution	10^{-3} s^{-1}
Bandwidth	0.1 – 100 Hz

Water temperature (SBE 3F)*

Range	-5 – 35 °C
Accuracy	1 x 10^{-3} °C (NIST traceable)
Resolution	1 x 10^{-4} °C
Time Response	0.070 s ± 0.010

Micro Temperature (FP07)

Range	-5 – 35 °C
Accuracy	N/A
Resolution	1 x 10^{-5} °C (using signal+derivative technique)
Time Response	0.007 s ± 0.003

Conductivity (SBE 4C)*

Range	0 – 7 S/m
Accuracy	0.0003 S/m
Resolution	0.00004 S/m at 24 Hz
Time response	0.060 seconds (pumped)

Pressure (Keller)

Range	0 – 100/200 bar
Accuracy	0.1 %
Resolution	0.0005 dbar (using signal + derivative technique)

Analog/Digital Converter

Number of channels	16
Resolution	16 bits (true)
Linearity	15 ppm

Vibration sensors (accelerometers)

Range	±1 g
Accuracy	2%
Resolution	3 x 10^{-5} g (1 – 20 Hz)
Bandwidth	0.1 – 100 Hz

* optional

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