



VIEW ABSTRACT

SEDIMENTATION EVENT SENSOR: EARLY INSIGHTS INTO VARIABILITY OF SINKING PARTICULATE MATTER AT HOURLY RESOLUTION, AND FUTURE EVENT DETECTION

Oceanic biogeochemistry is influenced by the quantity and composition of sinking particulate matter reaching the deep sea, which varies temporally. Typically, sinking particles are measured from samples collected and preserved in situ by sequencing sediment traps, which are limited by a small number of sample bottles. The Sedimentation Event Sensor (SES) is a new sediment trap that analyzes up to 6200 samples in situ, and can operate autonomously for a year between servicing. The SES captures macro images of each sample to provide detailed views of detritus, exuviae and fecal pellets. Fluorometric measurements taken at 590 nm and 690 nm bands provide estimates of the presence of chlorophyll *a* and accessory pigments. Here we describe data collected by the SES during deployments 50 m above bottom at the abyssal long time-series site (Sta. M, 4000 m depth NE Pacific Ocean) between 2012 and 2015. The SES detected variability of sinking particulate matter quantity and composition on the order of hours, as well as the rapid evolution and cessation of high-magnitude deposition events. The high sampling rate and capability for in situ data analysis allow the SES to detect episodic changes in particle flux. An on-board modem allows for event-triggered command over the sampling of other autonomous instrumentation at Sta. M, and communication with a surface Wave Glider.

AUTHORS

McGill, P. R., MBARI, USA, mcgill@mbari.org

Henthorn, R. G., MBARI, USA, henthorn@mbari.org

Bird, L. E., MBARI, USA, bila@mbari.org

Huffard, C. L., MBARI, USA, chuffard@mbari.org

Klimov, D. V., MBARI, USA, klimov@mbari.org

Smith, Jr., K. L., MBARI, USA, ksmith@mbari.org

DETAILS

Poster presentation

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