The Chinese University of Hong Kong
Earth System Science Programme

Robotic Observations of High Wintertime Carbon Export in California Coastal Waters

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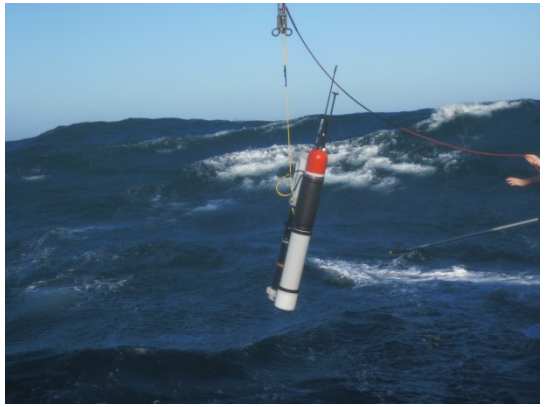
Date: 9 October 2015 (Friday)
Time: 3:00 pm
Venue: Conference Room, 3/F, Mong Man Wai Building

Abstract

Biologically mediated particulate organic and inorganic carbon (POC and PIC) sedimentation from surface waters is the principal determinant of the vertical oceanic distribution of pH and dissolved inorganic carbon. Carbon sedimentation not only is fundamental to atmospheric CO2, it also provides the energy fueling communities in the mesopelagic zone, despite these facts observations are temporally and spatially sparse. Here we report observations from Lagrangian Carbon Flux Explorers (CFEs), which imaged settling particles at hourly frequency at depths below 140 m in the Santa Cruz Basin, CA in May 2012, and in January and March 2013. Highest POC vertical flux (~250-600 mmol C m-2 d-1) occurred in January, when most settling material was cm-sized marine-snow aggregates, but when surface biomass was low; fluxes were low under high surface biomass conditions. January 2013 fluxes measured by CFE were 10-20 times higher than simultaneously deployed surface-tethered sediment traps, and similarly higher compared to previously reported sediment trap observations from nearby waters. The strength of coastal carbon sedimentation is likely underestimated.



~ All are Welcome! ~

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