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## **PROPOSAL FOR A SOUTHERN OCEAN BIOGEOCHEMICAL OBSERVATION AND MODELING PROGRAM**

The Southern Ocean accounts for a disproportionate share of the ocean flywheel effect on global warming, the uptake of anthropogenic carbon dioxide by the ocean, and the resupply of abyssal nutrients back into the productive upper ocean, yet this is one of the most poorly sampled and poorly understood regions of the ocean. Two major new developments have the potential to change that: (1) biogeochemical sensors mounted on autonomous floats that sample from the surface to 2000 m and penetrate under ice-covered regions; (2) the computational ability to carry out climate model simulations that can resolve mesoscale processes and assimilate observations to produce a state estimate of the ocean. We propose to capitalize on this unique set of opportunities with a Southern Ocean Biogeochemical Observations and Modeling (SOBOM) study that will bring together a trans-disciplinary team of observationalists and modelers, and of physical and biogeochemical oceanographers, to facilitate the scientific and technical collaborations that will be required to carry out this complex project.

<http://www.sgmeet.com/osm2012/viewabstract2.asp?AbstractID=9509>

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