

USING UNDERWATER GLIDERS TO IMPROVE WATER QUALITY SAMPLING

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Buoyancy driven Slocum Gliders were a vision of Douglas Webb, which Henry Stommel championed in a futuristic vision published in 1989. Slocum Gliders have transitioned from a concept to a technology serving basic research and environmental stewardship. The long duration and low operating costs of Gliders allow them to anchor spatial time series. Large distances, over 600 kilometers, can be covered using a single set of alkaline batteries. Since the initial tests, a wide range of physical and optical sensors have been integrated into the Glider allowing measurements of temperature, salinity, depth averaged currents, surface currents, fluorescence, oxygen, apparent and inherent optical properties.

Over the last 2.5 years, Rutgers Gliders have logged 33,908 kilometers, and flown 1696 days at sea. Gliders call into the automated Glider Command Center at the Rutgers campus via satellite phone to provide a status update, download data and receive new mission commands. The ability to operate Gliders for extended periods of time are making them the central in situ technology for the evolving ocean observatories. The sustained data permits scientists to gather regional data critical to addressing if, and how, the oceans are changing. The demonstrated maturity of these systems will now transition to provide a persistent and sustained water quality monitoring tools for a range of stakeholders. This presentation will highlight these possibilities.

KEYWORDS:

Ocean Observing, Technology, Modeling