Gliders Monitor Western Boundary Current Transport in the Solomon Sea

On-site Operations and Local Relations

William S. Kessler
NOAA Pacific Marine Environmental Laboratory, Seattle WA

Project Summary

The western boundary current in the Solomon Sea is the primary pathway by which waters from the subtropical South Pacific reach the equatorial zone and the Equatorial Undercurrent in particular. It is, therefore, an important part of the shallow overturning circulation that supports interannual to decadal climate variability in the Pacific. This project seeks to observe and understand how and why transport through the Solomon Sea varies. Underwater gliders are used to make several transects each year crossing the Sea to build a time series of transport variability. Analysis of this time series is determining how and why transport and water properties vary, how these affect and are affected by ENSO and decadal variability, and any local impacts affecting Solomon Sea residents.

The glider data can be viewed in near real-time at spray.ucsd.edu and is available for downloading from this server with a password available on request. This data is intended to be useful to climate analysts seeking to understand and predict interannual-decadal variability in the Pacific including those building simulation and prediction models that include ENSO and the Pacific's shallow overturning circulation.

This report covers the part of the Solomon Sea glider project conducted by the PI (Kessler) at NOAA/PMEL. This element involves on-site operations in the Solomon Sea, and is conducted integrally as part of the parent project of the same title, with Russ Davis (Scripps/UCSD) as PI and Kessler as Co-PI. The non-operational aspects of this project, including the scientific accomplishments and data output, are discussed in the longer Davis-Kessler report, which includes figures and Powerpoint slides.