

The contribution of the global ocean observing system to the investigation of ocean variability.

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The global ocean observing system (GOOS), under construction by a host of collaborating nations, is presently about 65% complete. The goal of the GOOS is to study ocean variability at a range of space and time scales to assist in the effort to monitor short and long term signals for climate and weather studies. Among the numerous different tools that are used in GOOS are satellite-based sensors, which provide observations over ocean regions that are undersampled by other measurement systems. These satellites provide important indirect measurements of surface temperature, color, surface height, and wind stress among other quantities. This lecture will review some of the different components of the ocean observing system, with a particular focus on satellite-based systems. Some practical uses and applications of these measurements will also be presented, including the detection of frontal regions, eddies and rings, and the estimation of volume transports and upper ocean heat content. The usefulness of these systems for measuring global trends will be another highlight of the lecture.