



Oceanography

OBSERVATIONAL AND INTERACTIVE

15-19 SEPTEMBER 2003

Snowbird Resort in Little Cottonwood Canyon above Salt Lake City, Utah, USA

Sponsors: National Science Foundation-USA and Natural Science and Engineering Research Council-Canada

Motivation: The scientific imperative to observe and quantify change and enhance signal in the presence of noise has been complemented by the recent, rapid development of major innovative enabling technologies for observing, interacting with, and modeling a host of complexly linked processes operating in the Earth, ocean, atmosphere system. Two decades ago, satellites, armed with a very modest sensor suite, revolutionized our understanding of surface variability in the oceans. Remote, in situ sensor arrays coupled with real-time data communications and high-speed computational power hold the promise of extending our reach through the full ocean depth and into the underlying oceanic crust.

To stimulate the development of interactive observatory-based research and education in the global, regional and coastal scales in the ocean, NSF has launched the Ocean Observatories Initiative (OOI). The Canadian Foundation for Innovation and NSERC are poised to invest significant resources in pursuit of real-time, remote scientific activities within the ocean environment. Because of the rapid advances in sensor technologies, power delivery and data telemetry systems, and stationary and mobile autonomous sampling platforms, these initiatives will significantly enhance marine research in the coming decades.

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OBJECTIVE

The goal of the workshop is to assemble an Initial Science Plan; a road map of the paths integrating a broad suite of science experiments, educational programs, and technological development projects that will optimize investments in interactive ocean-observatory science.

BACKGROUND

The workshop will build on earlier planning activities (and resulting reports), including the *Scientific Cabled Observatories for Time Series (SCOTS)* Workshop (Portsmouth, VA, 2002), the *Coastal Ocean Processes and Observatories: Advancing Coastal Research* Workshop (Savannah, GA, 2002), the NRC Report *Illuminating the Hidden Planet*, the NEPTUNE Feasibility Study (June, 2000), the DEOS Moored Ocean Design Study (August, 2000), *NSF Geosciences Beyond 2000: Understanding and Predicting Earth's Environment and Habitability*, and *OCEAN OBS 99* (St. Raphael, France). See the DEOS pages on <http://www.COREocean.org>.

WORKSHOP TOPICS

Areas of major emphasis will include, but are not limited to:

- Scientific or societal issues that can be advanced through utilization of concurrent data sets obtained with emerging ocean observatories and sensors
- Emerging and anticipated technologies that will enable concurrent observations of an expanding number of ocean variables, especially chemical and biological, on unprecedented time and space scales (platforms, power and data delivery systems, nanotechnology, sensors, etc.)
- Information technology and management of real time data
- Models for optimization of design and utilization of ocean observatories
- Integration of research-oriented observatories into U.S. and global ocean observational systems designed for operational purposes
- Utilization of observatories for education and outreach

PRE-WORKSHOP ACTIVITIES

A series of DEOS topical workshops will precede the workshop in order to facilitate the preparation of white papers that will be presented and utilized for the final workshop report and for refereed publication.

We anticipate that the workshop will include 200-300 international participants. A second announcement will be issued in early February of 2003. If you wish to be placed on the mailing list please respond to: William Fornes WFORNES@coreocean.org.



<http://www.COREocean.org>