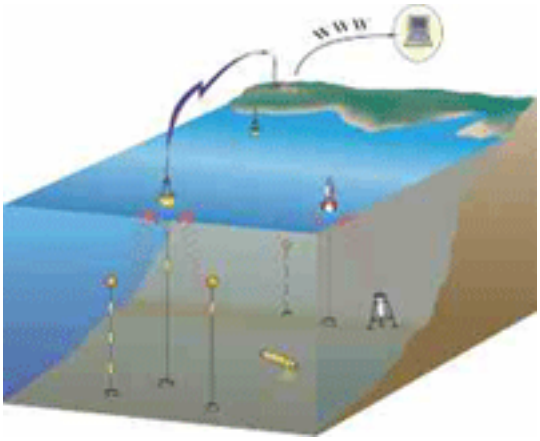
Portable Coastal Observatory Field Demonstration

SUMMARY:

Ocean observatories that provide data over a submarine cable are extremely expensive and provide data from a limited portion of the ocean. The proposed 'portable' observing system complements the cabled observatories by providing an opportunity to obtain data from multiple instruments at modest data rates in a wide range of locations.



Observatory diagram

INVESTIGATORS:

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DESCRIPTION:

The goal of this proposal is to develop an affordable, easy to use technology for the real time collection and dissemination of data from instruments deployed in the coastal ocean.

START DATE OF PROJECT:

September 19, 2001

END DATE OF PROJECT:

September 30, 2004

TOPIC:

Coastal and Marine Geology

APPROACH:

The observing system that has been developed consists of four elements: a low-cost acoustic data link that transfers data from instruments on the bottom or in the water column to a nearby surface buoy, a lightweight, easy to deploy surface buoy (and mooring), a radio-frequency modem to send data to shore, and a web-based automatic data distribution system. The system has been deployed and tested in Massachusetts Bay for extended periods.

IMPACT/RESULTS:

The technology of the portable coastal observatory has the potential to enable real time, in situ measurement systems to become standard operational tools for a wide range of applications including coastal zone and regulatory monitoring, naval observations, and scientific investigations. The capability to make widely distributed observations at reasonable cost is essential for ocean forecasting, process studies, naval operations, and long-term monitoring. This distributed communication technology complements the intensive, localized observations made using coastal observatories that are linked to shore via cable. This proposal is a focused effort to demonstrate technology that has the potential to allow implementation of a distributed ocean measurement system at modest cost.

RELATED:

- Martini, M. and Butman, B., Real time near surface currents measured in western Massachusetts Bay