

Department of Ocean & Resources Engineering

Seminar

OCEAN FLOOR OBSERVATORIES

by

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Abstract

An observatory is a facility where scientists can perform experiments while sharing infrastructure with others. Ocean technology has advanced to the point where observatories can be constructed on the ocean floor to service scientists interested in physical oceanographic, biological, and geological activity in the ocean. Previously, all such experiments have been conducted using internally-recording instruments and submersibles with limited time on the bottom. The new technologies make it possible to explore these phenomena for unlimited lengths of time, and to obtain data in real-time in the laboratory on shore. Several technologies are key to the success of ocean floor observatories, electro-optical submarine cables, underwater mateable connectors, submersible and rovs, and deep-ocean buoys. Two existing observatories, and one in the planning stage will be discussed; the Hawaii Undersea Geo-Observatory (HUGO), located on Loihi volcano; the Hawaii-2 Observatory, located about half way between Hawaii and California; and NEPTUNE, an observatory being planned off the Oregon-Washington coast.