

EXHIBIT 1National Science  
Foundation Award

Title : Acquisition and Operation of an Array of High Frequency  
RADARs for Observing Surface Currents in Hawaii Coastal  
Waters  
Type : Award  
NSF Org : OCE  
Latest  
Amendment  
Date : September 9, 1997  
File : a9724464

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Award Instr.: Standard Grant  
Prgrm Manager: Lisa Rom 703-306-1580 fax 703-306-0390  
OCE DIVISION OF OCEAN SCIENCES  
GEO DIRECTORATE FOR GEOSCIENCES

Start Date : October 1, 1997  
Expires : September 30, 2000 (Estimated)

Expected  
Total Amt. : \$674,816 (Estimated)  
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NSF Program : 5413 INSTRUMENTATION

Fld Applctn: 0204000 Oceanography

Abstract :

9724464 Flament The University of Hawaii will acquire and install an array of high frequency Doppler radars, capable of mapping surface ocean currents within a distance of up to 70 km, operate the array, analyze the resulting data, and produce various products that will support oceanographic research. The radar array will provide time series of currents at a resolution of 3 km and data will be updated often enough to provide good spatial and temporal coverage for studying dynamic processes. Radar-derived data on currents will be compared with data from traditional current meters. The PIs anticipate that advances will be made in understanding processes such as tidal propagation around islands, formation and decay of island-trapped waves, and eddy generation in the lee of islands. Studies of biological processes such as recruitment of pelagic larvae to adult coastal habitats, requiring information on advection by ocean currents will also benefit from this new capability. An important byproduct of this project will be real-time dissemination of surface current maps to aid those with a requirement for such data, such as ship routing, coastal zone management, pollution abatement, nearshore sediment transport and other uses. The University is cost-sharing this project.