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MEETING

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Honolulu, Hawaii USA



# E Komo Mai

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### Abstract

#### SYNTHETIC TRIALS OF A COHERENT-SOURCE MULTICHANNEL SEISMIC SYSTEM FOR OCEANOGRAPHY

Multichannel seismic techniques can map ocean fine structure to give new insight into ocean mixing processes and their relationship to mesoscale features, and can give high-resolution maps of temperature and salinity. However, conventional seismic techniques involving long hydrophone strings and powerful air-guns have not been adapted for routine oceanographic use. A coherent sound source that generates a lower intensity, longer-time, controlled and well-known signal with pseudo-random components and spectral content tailored for optimal signal/noise ratio has several advantages that may allow an oceanography-specific multichannel system to be used. We present results from a synthetic seismic system that incorporates a realistic background noise spectrum and realistic reflectivity profiles derived from ocean Conductivity-Temperature-Depth observations. Synthetic seismograms made using an air-gun source are compared with real seismograms in order to test the fidelity of the system. Seismograms from a coherent sound source are compared with the air-gun results to assess the performance of the system. We discuss the effects of variations in source signal length, spectral content, and pseudo-randomization on the seismic image quality.

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#### Details

Oral presentation

Session #:012  
Date: 2/28/2014  
Time: 08:45  
Location: 316 A

Presentation is given by student: No

