



AWSFL008-DS3

**NSF Award Abstract**  
**- #9730790**

**Collaborative Research: High-Resolution  
Multichannel Seismic Imaging of Active  
Tectonics, NW Gulf of California**

**NSF Org** OCE

**Latest Amendment Date** January 17, 2001

**Award Number** 9730790

**Award Instrument** Continuing grant

**Program Manager** Bilal U. Haq  
OCE DIVISION OF OCEAN  
SCIENCES  
GEO DIRECTORATE FOR  
GEOSCIENCES

**Start Date** January 1, 1999

**Expires** December 31, 2002 (Estimated)

**Expected Total Amount** \$190000 (Estimated)

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**NSF Program** 1620 MARINE GEOLOGY AND  
GEOPHYSICS

**Field Application** 0204000 Oceanography

**Program Reference Code 0000,OTHR,**

## **Abstract**

Funds are provided for a high-resolution multi-channel seismic survey of tectonically active area in northwestern Gulf of California. The Gulf of California is one of the very few accessible areas where the transitional crust from continent to ocean can be studied in a region of oblique extension. Most models of the region show a single, simple plate boundary, due to lack of deeper understanding. Two end-member models are possible: diffuse deformation in a broad active zone, and localized slip in two separate zones in the northern Gulf. The key to discriminating between the two models lies in shallow Gulf of California. The PIs will use the LDEO portable high resolution MCS system on a Mexican research vessel to obtain seismic reflection profiles of active tectonics, augmented with sonobuoy refraction profiles, to image the young faults, transform faults and the spreading center. Modeling will quantify estimates of kinematics of the current plate motions and strain partitioning and lead to an understanding of the organization of the strike-slip and rift segments during transition from a continental to an oceanic system.

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