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2014

**Non-Linear Internal Wave Initiative (NLIWI),  
Acoustics (archived)**

Monterey, California: Naval Postgraduate School

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## Non-Linear Internal Wave Initiative (NLIWI)

### Acoustics

The goal of this study is the physics of acoustic propagation over very short ranges in the complex internal wave and bathymetric environment of the continental shelf in the northern South China Sea (SCS) is proposed, as part of the ONR Nonlinear Internal Waves Initiative (NLIWI07/08). The overall objective is to assist Taiwanese scientists in the design, construction, deployment and recovery of acoustic and physical oceanographic moorings, and subsequent investigations into the temporal variability in acoustic propagation intensity fluctuations on the continental shelf over propagation ranges of less than 10 km. Acoustic intensity fluctuations are due to variability in the water column and bottom environments, and at large ranges cause the scintillation index to exceed saturation. By performing this experiment at short ranges, acoustic signal fluctuations will be limited to a minimal number of internal waves and bottom interactions, allowing:

1. Better quantification of the statistics of acoustic fluctuations which vary as a function of time, range, and bottom incidence angle, and
2. More feasible isolation of the relative contributions of the variability in the water column and bottom topography/composition.



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