Nuke test detectors might warn of tsunami

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Hydrophone stations in the world's oceans used to detect nuclear testing might help in an early warning system for tsunamis, say U.S. researchers.

The tsunami generated by the Sumatra earthquake Dec. 26, 2004, was the first such event recorded globally with modern instrumentation, according to study authors Jeffrey A. Hanson and J. Roger Bowman, Science Applications International Corp., Monitoring Systems Division, in San Diego.

Hanson and Bowman analyzed recordings from hydrophones and seismic stations around the Indian Ocean. The hydrophones, located near Diego Garcia and off Cape Leeuwin, Australia, are part of the international system for detecting nuclear tests.

The hydrophones recorded the pressure fluctuations caused by the tsunami at frequencies orders of magnitude lower than their nominal acoustic recording band.

The observations, published in Geophysical Research Letters, show a remarkably coherent, dispersive wave train that lasts up to 36 hours with frequencies spanning 1 to 25 millihertz -- more than a factor of two higher than previously observed from earthquake tsunamis. These same signals are observed at Indian Ocean seismic stations such as at Cocos Island and Casey, Antarctica.