

PACT – a bottom pressure based, compact deep-ocean tsunameter with acoustic surface coupling

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The German-Indonesian Tsunami Early Warning System (GITEWS) is currently established to minimize the risks of disastrous events such as the December 26, 2004 Indian Ocean tsunami. To maximize alerting periods, to avoid false alarms and to accurately predict tsunami wave heights, real-time observations of ocean bottom pressure are required from the deep ocean. To this end, the PACT system (Pressure Acoustic Coupled Tsunameter) was developed. PACT's bottom unit combines a highly-sensitive pressure sensor, a data processing unit for automatic tsunami detection, and an acoustic modem in a single, robust housing. The data are transferred via a bidirectional acoustic link to PACT's surface unit, which is mounted to a surface buoy (not part of the PACT system), allowing also remote activation of the tsunami mode in case a wave is expected from e.g. seismic data. The PACT system has successfully passed extensive laboratory and at-sea tests. The first deployments off Indonesia as part of GITEWS are scheduled for April 2009.



Tsunami Detector