



A seismological broad-band sensor at 2500m in Mediterranean Sea

A. Deschamps (1), Y. Hello (1), M. Dugué (2), V. Bertin (3), A. Le Van Suu (3)
(1° Géosciences Azur, CNRS/IRD, Villefranche, France [deschamps@geoazur.unice.fr, hello@geoazur.obs-vlfr.fr], (2) Observatoire de la Côte d'Azur, CNRS, Nice, France, (3) Centre de Physique des Particules de Marseille, CNRS/IN2P3, Marseille, France.

In the frame of the Antares experiment designed for neutrino detection in a large water volume, important marine facilities (mainly power and communication cable) have been deployed at sea floor in deep water (2500m), 30km off shore from Toulon (France). The integration of a broad-band seismometer has been realized on the instrumental line dedicated to the measurement of environmental parameters. The instrument, a 3 components Guralp sensor, CMG3 type at 360 sec, associated to a Guralp DMG24 digitizer) was re-designed by Guralp Systems in order to find the best compromise between a good coupling with the ground at any frequencies and a simple installation on the sea floor by a ROV. Time is controled sending a periodic pulse precisely dated by the Antares clock. Instrument control and data collection in quasi real time are performed through asynchronous RS232 connexion driven by a dedicated software. During the first test deployment in April 2003, a power failure occurred few hours after the connexion and no data were collected. The next deployment is planned for beginning of April 2005 with new cables and connectors, revised sensor and improved communication software. After verification of operation, data will be added to the european seismological broad-band network (VSBN) at Orfeus.