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Underwater geophysical monitoring for European Multidisciplinary Seafloor and water column Observatories

S. Monna[1], G. Falcone[1], L. Beranzoli[1], F. Chierici[2*], G. Cianchini[1], M. De Caro[1], A. De Santis[1], D. Embriaco[1], F. Frugoni[1], G. Marinaro[1], C. Montuori[1], L. Pignagnoli[3], E. Qamili[1], T. Sgroi[1] and P. Favali[1]

[1]Istituto Nazionale di Geofisica e Vulcanologia, (INGV), Rome, Italy

[2]Istituto Nazionale di Astrofisica (INAF), Bologna, Italy

[3]Collaborator Istituto di Scienze Marine-CNR, (ISMAR), Bologna, Italy

*INGV and ISMAR research associate

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Corresponding author: S. Monna, Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy, (e-mail: stephen.monna@ingv.it; Tel: +39-06-5186-0404)

KEY WORDS: European Seas, geophysical measurements; multiparameter seafloor and water-column observatories; data quality analysis; complex systems; geo-hazard; tsunami early detection.

Abstract

We present a review of our work on data acquired by GEOSTAR-class (GEophysical and Oceanographic STation for Abyssal Research) observatories deployed at three EMSO (European Multidisciplinary and water-column Observatory; htttp://www.emso-eu.org) sites in southern European waters where strong geo-hazards are present: the Western Iberian Margin, the Western Ionian Sea, the Marmara Sea, and the Marsili basin in the Tyrrhenian Sea. A procedure for multiparameter data quality control is described. Then we explain why the seafloor is an interesting observation point for geophysical parameters and how it differs from land sites. We consider four interesting geophysical phenomena found at the EMSO sites that are related to geo-hazard. In the first, we show how unknown