



## **Geophysical monitoring from sea [U+FB02] oor observatories in Italian volcanic sites: Marsili Seamount, Etna Volcano and Stromboli Island.**

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Many volcanoes on Earth are located within or near the oceans and observations from the seafloor can be very important for a more complete understanding of the structure and nature of these volcanoes. We present some results obtained from data acquired in volcanic sites in the Central Mediterranean Sea. Data were taken by means of stand-alone free-fall systems, and fixed-point ocean observatories, both cabled and autonomous, some of which are part of the European research infrastructure EMSO (European Multidisciplinary Seafloor and water-column Observatory, [www.emso-eu.org](http://www.emso-eu.org)). EMSO observatories strongly rely on a multidisciplinary approach, in spite of the many technical challenges that the operation of very different sensors by means of a single acquisition system presents.

We focus on three volcanic sites near the coasts of Italy (Marsili seamount, Stromboli Island and Etna Volcano) involved in subduction processes and to the opening of the Central Mediterranean basin. Through multidisciplinary analysis we were able to associate geophysical and oceanographic signals to a common volcanic source in a more reliable way with respect to single sensor analysis, showing the potential of long-term seafloor monitoring in unravelling otherwise still obscure aspects of such volcanoes.

The very strong expansion of seafloor monitoring, which is taking place both in the quantity of the infrastructures and in the technological capabilities, suggests that there will be important developments in the near future.