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Deep seafloor magnetic observations during GEOSTAR and ORION missions

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GEOSTAR and ORION projects represent a big effort of the European scientific community for exploring the seafloor environment with an automatic observatory for long term geophysical, geochemical and oceanographic observations. The observatory was always equipped with a couple composed of a vector magnetometer and a scalar one. Three exploring missions were undertaken at benthic depths of the Tyrrhenian Sea between 2000 and 2005 with the observatory working for many months at the time. Apart from a few problems, the magnetometric system performed well and the results were of great interest. This presentation will describe the characteristics of the magnetometers, their calibration, the data reduction and analysis, and some results deduced from the missions. For instance, the long term seafloor recording extending to several months of geomagnetic variation is capable to provide an independent estimation of the Moho depth from an electromagnetic point of view.