

# Installation of ocean bottom electromagnetometer on the Real Time Deep Sea Floor Observatory off Hatsushima Island in Sagami Bay

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We have developed a long-term and real-time observation system of electromagnetic (EM) fields at the seafloor using a submarine cable since 2000. In January, 2005 we successfully connected an ocean bottom electromagnetometer with the Real-Time Deep Sea Floor Observatory off Hatsushima Island in Sagami Bay. The installation was carried out by a remotely operated vehicle, the Hyper Dolphin, and its support vessel, the Natsushima, during the NT05-01 cruise. In addition, another group installed an ocean bottom gravimeter for the observatory during the same cruise. The observatory was established at a depth of 1174 m in the area of numerous giant white clams by JAMSTEC in 1993. Linked the land station by optical fiber cable, it has monitored the state of the organism population, ground and water temperature, the occurrence of earthquakes, and water turbidity in real time. This mission added further three potential fields (electric, magnetic and gravity fields) to the existing measurements. The south Kanto area including Sagami Bay is tectonically active because the Philippine Sea plate is subducting beneath the North American plate at the Sagami Trough and the Izu Peninsula is colliding with the Honshu Arc. Those new measurements will provide valuable information on the crustal deformation, the mechanism of the occurrence of earthquakes, the development of the earthquake disaster prevention system and the environmental changes of the deep-sea. We will here present the outline of the EM field observation system and preliminary results of the measurement.