



## The Ninety East Ridge Observatory: NERO

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In the framework of the international cooperation between IPGP, JAMSTEC and IFREMER, and of the international program ION, an ocean bottom observatory is planned to be installed at NERO site (Ninety East Ridge Observatory) along the Ninety East Ridge in the Indian Ocean (18°S - 88°E). The observatory will be located on the indo-australian plate which is characterized by a complex history and high intraplate seismicity. The plate moves toward the North, it is locked at the North-East by India and it subducts at the North-West in the Java Sumatra trench. The observatory is located 2500 km away from the great Sumatra earthquake (december 26, 2004, M=9.0). This site has been chosen in order to fill a gap of seismic stations in the Earth global coverage. This station will be used to study the indo-australian plate deformation, the interaction between the plate and the mantle and the role of the Ninety East ridge, which is the surface track of Kerguelen hotspot.

The observatory NERO includes a borehole station, NERO1, and an ocean bottom station, NERO2. The borehole station NERO1 is made up of a broadband seismometer within the borehole and a modulus installed on top of the borehole that contains the data storage unit and the energy for one year of recording. NERO1 will be installed by the Japanese ROV Benkei in the ODP borehole that was drilled in 1998. The borehole station is designed to run autonomously during about one year. After one year, it is necessary to have a ROV cruise to get the data and to change the batteries. The ocean bottom station NERO2 is designed to be installed at that time. It comprises a broadband ocean bottom seismometer with a data storage unit, an electromagnetic station and the power unit.