Ocean bottom seismographic observation of the aftershock activity accompanied with the 2005 off Miyagi Earthquake (M 7.2)

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An interplate earthquake with M 7.2 occurred off the Miyagi prefecture, the landward slope of the middle part of the Japan Trench, on Aug. 16 2005. In this area, we have started a series of the ocean bottom seismographic (OBS) observations since 2002 because a large (˜M 7.5) earthquake is apprehended to occur within next two decades. 19 OBSs were in operation at the occurrence of the mainshock of the 2005 earthquake and we built 16 OBS stations, in addition to them, to clarify the aftershock distribution in detail. Five OBSs were deployed by helicopter on Aug. 20, four days after the mainshock occurrence. JAMSTEC sent R/V Yokosuka to the aftershock area during Aug. 27 to 31, and we installed the 16 stations. In the same cruise, we also retrieved OBSs, with records of the mainshock, and deployed readied ones at five stations around the epicenter of the mainshock. The recovery of those OBSs, except for five long-term observing type OBSs (LTOBSs), were conducted during the research cruises of R/V Hakuho, R/V Kofu-maru and Kaiko-maru No.5 in Oct. and Nov. The five LTOBSs will be retrieved in May 2006. Resultingly, we obtained the aftershock records at 30 offshore stations for about two months. Most of the aftershocks concentrate within a rectangular area with 20 km x 25 km, forming small clusters. In this area, the hypocenters make up a thin landward dipping plane whose dip and strike correspond well to those of the published focal mechanism solution of the mainshock.