

Aftershock observations of the 2004 off the Kii Peninsula earthquake by using ocean bottom seismograph(2)

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The 2004 off the Kii Peninsula earthquake(Mj7.4) happened off the southeast coast of Kii peninsula on 5 September 2004. It has been interpreted that the earthquake occurred at inside of the Philippine Sea Plate and the focal mechanism is of a high-angle reverse fault type. Although the aftershock activities have been decreasing gradually after the main shock, they have been still active today. We are interested in the relation between the earthquake and the Tonankai-Earthquake, which is expected to occur in the first half of this century.

We have conducted pop-up type ocean bottom seismographs(OBSs) observations around the aftershocks region to investigate the hypocenters distribution and time-change of the aftershock activities in detail. The first observation was made during the period from Sep.22,2004 to Dec.1,2004 by installing six OBSs. Successively, the second observation was made from Dec.8,2004 to Mar.3,2005 by nine OBSs. After three months blank, we made the third observation from May.22,2005 to Aug.2,2005 by eleven OBSs.

To pick up arrival times of seismic events, we referred to a hypocenters catalogue by JMA for the first and the second observation. We determined 1282 hypocenters on the first observation and 500 on the second. On the third observation, we picked up more small seismic events than that of the previous observations. The number of determined hypocenter is 759. To improve accuracy of the hypocenter locations, a station correction method has been applied to reduce a sediment layer effect using a Ps converted wave, so that some seismic clusters have been detected. A belt shape cluster of which the length is about 20km extends to SW direction, which is parallel with Nankai trough axis, from the epicenter of the main shock. Another belt shape cluster of which length is about 10km lays WNW-ESE direction at north side of the epicenter.

According to the JMA hypocenters, the aftershocks activity looks decreasing evenly around the whole aftershock region. However, it can be pointed out that the decreasing rate of central region of the aftershocks is little higher than that of edge region by relocated OBS hypocenters. Furthermore, in the third observation, we detect some seismic active zones, which have not been listed in JMA hypocenters catalogue, on the edge region of the aftershocks.

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