

Seismicity in Hyuga-nada by temporary seismological observation both of sea and land area (2)

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Seismic activity of the Philippine Sea plate differs notably Hyuga-nada and near Shikoku. Although usual microearthquake activity is active in Hyuga-nada, it is inactive near Shikoku. On the other hand, although the great earthquake (larger than M8) has occurred repeatedly in near Shikoku at intervals of about 100 years, in Hyuga-nada, smaller earthquakes (M7 class) has occurred at intervals of about dozens of years. Moreover, it was discovered that aseismic slip has occurred from GPS data in Bungo channel, between Hyuga-nada and near Shikoku (Hirose et. al, 1999). Thus, styles of earthquake occurrence differ notably in the adjoining area.

As mentioned above, plate coupling of the Philippine Sea plate change from near Shikoku to Hyuga-nada, but this reason is not yet known well.. As one method of know the reason, it is important to investigate the details of the seismic activity in Hyuga-nada. So, we performed extraordinary observation in east coast of Kyushu and Hyuga-nada for two months in April, 2002 to June. 23 OBSs were deployed above hypocentral region of Hyuga-nada and 4 data loggers were deployed in east coast of Kyushu in order to compensate a regular seismic network on land.

We calculated the highly precise focus distribution and the earthquake mechanism solution. Consequently, we found that reverse fault type earthquake and normal fault type earthquake have occurred by the almost same frequency, and that normal fault type earthquake has occurred so that a reversed fault type earthquake may be inserted up and down. It is suggested that normal fault type earthquake has occurred both side of plate boundary; we acquired important information about what determine the intensity of coupling between plates.