

Integrated monitoring of seismicity in and around the Suruga Bay using Ocean Bottom Seismometers and inland stations.

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The Suruga bay is located in the western flank of the Izu Peninsula in central Japan. It marks the easternmost boundary of the Nankai trough, of the Philippine Sea plate subduction zone. The Fujikawa fault zone located at the northern tip of the Suruga Bay is considered to be the landward extension of the megathrust boundary between the Philippine Sea plate and the Eurasia plate (e.g.: Yamazaki, 1992). This megathrust boundary produced the M8.4 Ansei-Tokai Earthquake (e.g.: Ishibashi, 1981), and is assumed to be the source region of the next Tokai Earthquake. We closely monitored the seismicity in the vicinity of the Suruga Trough axial region from May, 2018 to September, 2018, using 6 pop-up type Ocean Bottom Seismometers (OBS). In recent years, several moderate size earthquakes have occurred in the Suruga Trough axial region (M6.5 in 2009 and M6.2 in 2011), that resulted in a prominent excitation of seismicity in the area. Using the inland routine observation network alone, those earthquakes are estimated to have occurred on the subduction zone of the Philippine Sea Plate. However, there is a considerable amount of hypocenter depth location error due to the lack of stations in the sea areas.

In this study, we will report the results of the OBSs observations, which enabled us to make more accurate estimations of the frequency and hypocenter depth distribution of the earthquakes occurring in the Suruga Trough axial region.

Keywords: Suruga bay, Earthquake cluster, Seismicity