

Seismological comprehensive observation of the deep low-frequency tremor at Tokai subduction zone in February 2009

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An activity of the deep low-frequency tremor (LFE) occurred in the central part of Aichi prefecture at Tokai subduction zone from 5th to 12th (at present) of February 2009. Obara (2002) and Katsumata & Kamaya (2003) have reported such a LFE activity by using the Hi-Net seismic network. We observed it not only by permanent broadband seismic stations but also by two temporary array stations which were installed in the active area and in the east of Aichi prefecture, respectively. We report seismological comprehensive observation of the LFE as the followings.

(Two seismic array stations)

We installed temporary array stations at Shimoyama in Toyota city and Horai in the east of Aichi prefecture before 2009. Shimoyama array station (SMY) has 6 high-sensitive seismographs with three components in a triangle area with about 100 m sides. We found remarkable records of LFE from 10 min to 15 min of 2 o'clock (JST) on February 9th in all 12 channels of SMY. Most of the records show complicated as like as noise and partly a pulse wave. Horai station has 12 high-sensitive seismographs with three components. Its seismic records have not been collected at present, because its observation system is not on-line.

(Broadband seismic stations)

We observed the LFE by 3 broadband seismic stations in the southeast of Gifu prefecture and 5 broadband seismic stations in Aichi prefecture. The seismographs in Gifu prefecture are CMG3T in Shomasama station (SMS4), STS-1 in Mizunami station (MZN), and VSE in Togari station (TGR165). The seismographs in Aichi prefecture are STS-2 in Toyone station (NU.STN), STS-1 in Inabu station (NU.NAIB), STS-2 in Mikawa station (NU.MIK), STS-2 in Inuyama station (NU.INU1), and STS-1 in Asahi F-net station (N.NAAF).

(High-dense network of seismic stations)

Tono Research Institute of Earthquake Science has a high-sense network of seismic stations with acceleration seismographs in Tono district. Eighteen stations in the network continue recording. We found the records of the LFE observed in a part of the stations.

(References)

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(Acknowledgements)

We thank to ATMOS of Hiroshima University, the National Research Institute for Earth Science and Disaster Prevention (NIED), and Japan Meteorological Agency (JMA).