

SCG058-P04

Room:Convention Hall

Time:May 23 10:30-13:00

Observation of deep low-frequency earthquakes (LFE) using a middle scale array at Shimoyama in Toyota city, Tokai

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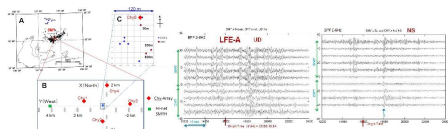
Tono Research Institute of Earthquake Science (TRIES) installed a small scale array at Shimoyama in Tokai area in 2006 (Figure A and C). This array (SMY) has 6 high-sensitive seismographs (2Hz) with three components in a square area with about 120 m sides. On March of 2010 we also installed a middle scale array in about 3 km x 3km square at Shimoyama (Figure B). This array (CHY) started observation by using 4 stations of Chy 1-4. And Chy0 station started from December 2010 (Figure c).

All of the seismic stations of CHY array have three-component seismographs (JEP-6B3, 0.1-10Hz) of acceleration type at the depth of 4 m. By using the data-logger of LS7000 we digitize their signals. Their digital sampling rate is 200 Hz. The digitized data are transported to the data center of TRIES by using the lines of ADSL, ISDN, and mobile phone.

We observed a remarkable activity of LFE occurring in Tokai area from 11 to 30, November in 2010 by both of SMY and CHY arrays. Those epicenters which were located by JMA (Japan Meteorological Agency) are shown in Figure A. SMY and CHY arrays locate in the region of the epicenters. Most of the seismic waves of LFE's recorded by the stations of the arrays show complicated as like as noise or tremor. An example of one minute length records of a LFE which we call LFE-A tentatively is shown in the figure. The JMA hypocenter of LFE-A is as the following:

2010/11/13, 23h58m19.54s, N35.014, E137.294, Depth36.1km, M0.6

The coherence of the seismic waves among data channels of SMY array is good not only in NS component but also UD component. But the coherence of CHY array is slightly good in NS component but poor in UD component. Using the records of SMY and CHY arrays we will research azimuths and apparent velocities of seismic waves propagating from LFE sources.



Keywords: deep low-frequency earthquakes, middle scale array, acceleration type seismometer, activity in Tokai district, Shimoyama in Toyota city, seismic observation