

Co-seismic Changes of Groundwater Temperature and Level at San-in Hotspring Observation Network

Tatsuya Noguchi[1]; Ryohei Nishida[2]; Kunihiko Watanabe[3]; Naoji Koizumi[4]; Sei Yabe[5]; Teruyuki Asada[6]; Yuka Oda[7]; Masafumi Imanishi[8]

[1] Eng., Tottori Univ.; [2] Civil Engi, Tottori Univ; [3] DPRI, Kyoto Univ.; [4] GSJ, AIST; [5] TOTTORI OBSERVATORY,RCEP,DPRI; [6] Abuyama Obs. DPRI, kyoto Univ; [7] TTT,RCEP,DPRI,KYOTO Univ.; [8] WESCO, Inc.

We have observed ground water temperatures and ground water levels at hotspring in San-in area form March, 2001 (Nishida et al, 2002).

The 14 observation stations, Tottori, Iwai, Misasa, Shikano, Okutus, Yubara, Chiya, Saginoyu, Sanbe, Izumoyumura, Yoshioka hotspring and Hino, Nanbu-Tojo, Nanbu-Moroki are working at present. Ground water temperatures are observed at all station and water levels are observed at Tottori, Iwai and Saginoyu stations. As the water temperature observation system, the digital thermometer with 1/100 degrees accuracy and the data logger with 20bit resolution are used. The water temperature sensors are set to the points which water temperatures are most changing in the wells. As the water level observation system, water pressure transmitter with 0.2cm accuracy and the same data logger as the water temperature observation are used. The record interval is 1minute averaged record and the data is transferred by telemetry system. The data is distributed by the Internet.

The water temperature remarkably increased after the 3 earthquake events from 2004, May to now. After the earthquake of Kii-hanto-oki(2004.9.5 19:07, Mj6.9), Tokaido-oki(2004.9.5, 23:57, Mj7.4) and Indonesia Sumatra-oki(2004.12.26, about 10:00 ;Japanese time, M9.0). Water temperature and water level increased at Iwai, Tottori and Okutsu station after Kii-hanto-oki, Tokaido-oki earthquake, Iwai, Tottori, Saginoyu and Okutsu station after Indonesia Sumatra-oki earthquake.

Reference

Nishida et. al., Seismological society of Japan fall meeting, 2002.