Underground Water Observation in Wari-ishi Hot Spring, Gifu Prefecture

Shigeki Tasaka[1]; Yoshimi Sasaki[2]; Masaya Matsubara[3]; Norio Matsumoto[4]; Akito Araya[5]
[1] IMC, Gifu Univ; [2] Faculty of Educ., Gifu Univ.; [3] IMC, Gifu Univ.; [4] GSJ, AIST; [5] ERI, Univ. Tokyo

The continuation observation of water flow rate was carried out at the Gifu Hida Kamioka, Wariishi hot spring, in Center of Japan. The amount of water flow from 850m below ground was measured in the 10 minute interval from 1998 to 2004, and at intervals of 1 second from 2004, by using the electromagnetic flux meter with the accuracy of 0.25%.

The observation result of water change is related to the crust distortion accompanying the earth tide or the occurrence of an earthquake through change of the pore pressure of a stagnant water layer.

The purpose of this research is to clarify relation of water change, and seismic waves and crust distortion, and to clarify the relation of the occurrence of groundwater and an earthquake from a viewpoint of earthquake prediction.

Analysis of water flow was performed in the following four viewpoints, 1)hypocentral distance of the earthquake and magnitude, 2)earth tide, 3)seismic waves, 4)crust strain at the time of the occurrence of earthquakes.

Fig. Comparison with FFT Amplitude Ratio of Water and strain in three big Earthquake, KII Pre-Earthquake, KII Main-Earthquake and Sumatra Earthquake.