

The influence of the ocean tides and the sea surface variations on the groundwater level changes

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There is a report that the water level of well where distributed within the area of Pacific coast from Kii peninsula to Sikoku was decreased before the Showa Nankai earthquake (1946, M8.0).

Umeda(2003)proposed a model to make the mechanism of the well water decrease before the earthquake. To verify the Umeda model, we have operated alley observation of the groundwater level at four wells of 60m,160m,360,670m from the seashore since April,2003. We verified two items. The first verification is the comparison of the water level of the wells and the height of the surface of the sea. By the result of the leveling, we confirmed the thing which is higher than the surface of the sea about the water level of all wells. The second verification is the distance attenuation of the influence of the ocean tide on the water level of the well. We find amplitude ratio with water level to ocean tide from the observation result and got the approximate expression of the ocean tide distance attenuation. The infulence of ocean tide seems to reach 1.1 km if following the formula.