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A continuous and long term monitoring of hydraulic conductivity at Kamakura

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We will discuss results of a continuous monitoring of the hydraulic conductivity at Kamakura observatory.

The radon concentration anomaly related to earthquakes is governed by both rocks and the structure of an aquifer. The most important parameter of the structure of the aquifer is the porosity, which is directly connected to the hydraulic conductivity. It is therefore essential to establish a monitoring method of the hydraulic conductivity with the radon concentration for understanding such preseismic phenomena.

Groundwater level recovery, which is caused by an intermittent water sampling with 1 hour interval, was recorded automatically every 10 seconds for 1 year. The time constants of the water level recovery were calculated by Wylie's equation. Finally, the apparent hydraulic conductivities were calculated from the recovery constants with the structural parameters of the well.

We will focus attention on the characteristics of the time series of the apparent hydraulic conductivity.

Keywords: Groundwater, Hydraulic Conductivity, Continuous Monitoring