

Monitoring of the temperature profile in a borehole drilled into the Nojima fault during a water injection experiment

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A water injection experiment was carried out in a borehole drilled into the Nojima fault in January to March, 2000. We monitored the temperature distribution in the borehole using an optical fiber as a temperature sensor. No significant decrease in temperature was observed below about 550 m, indicating that injected water leaked out of the hole at around this depth. The temperature in the hole reached the equilibrium about one day after the start of water injection, since cooling by injected water and heating from the surrounding formation were in balance. The temperature profile rapidly recovered after injection was ceased, though the recovery around the leaking depth was be slower.