Data analysis of time-lapse well logging results for the monitoring of stored CO2 at the Nagaoka pilot site

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Monitoring of the CO2 in the underground is one of the essential technologies to carry out CO2 geological sequestration safely. At the first Japanese pilot CO2 injection site (Nagaoka), well loggings which are consist of sonic, neutron, and induction loggings have been continued for more than 6 years. The time-lapse well logging at Nagaoka provide the CO2 behavior around the observation log. To improve understanding of the trap mechanism of CO2, rock physics model which relates the physical parameters (modulus etc.) and reservoir parameters (permeability, saturation etc.) would be important. We study the rock physics model at Nagaoka using the well logging data with an estimation of measurement errors.

Keywords: CO2 geological storage, Well logging, monitoring, Nagaoka