



Changes of petrophysical properties of long sandstone core samples during CO₂-injection

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Changes of petrophysical parameters were studied on four different quartz rich sandstones (from northern and western Germany) during CO₂-injection. The injection experiments were carried out in 24 long samples (9 cm) to see the effect of length and different salinity (0.1M to 1M NaCl-solution) on porosity, permeability and electrical conductivity changes.

The samples were fully saturated before the injection process using a vacuum desiccator. Constant pressure method was used for all sets of experiments. After the experiments the samples were cut into 3 cm long pieces to investigate the changes of the porosity and permeability individually. X-ray powder diffraction (XRD) analysis was also done to investigate the mineralogical composition changes before and after the CO₂ injection. The first results show a relationship between the salinity of the brine and changes in petrophysical properties. XRD results show the relation between the salinity of the brine and the mineralogical dissolution/enrichment in the samples. Details will be presented on the poster.