

## Tracking of evolution of fluid distribution during plastic deformation of wet halite rocks via electrical impedance measurements

# Tohru Watanabe[1], Colin J. Peach[2]

[1] Dept. Earth Sciences, Toyama Univ., [2] Fac. Earth Sciences, Utrecht Univ.

Electrical impedance measurements were performed on deforming halite rocks containing small amounts of water in order to study the evolution of fluid distribution. Experiments were carried out on wet (H<sub>2</sub>O~30ppm) and 'dry' (H<sub>2</sub>O~5ppm) samples under non-dilatant condition (125C, 50MPa confining pressure and strain rate of  $\sim 5 \times 10^{-7} \text{ s}^{-1}$ ). Only ~30ppm water greatly weakens halite rocks through grain-boundary migration recrystallization. The observed resistivity change suggests the competition between thinning and thickening of connected fluid paths. The thinning is caused by the axial compression, and the thickening the grain growth due to grain-boundary migration.