Japan Geoscience Union Meeting 2014
(28 April - 02 May 2014 at Pacifico YOKOHAMA, Kanagawa, Japan)

SEM36-P02 Room:Poster Time:April 30 18:15-19:30

Numerical simulations for the electrical prospecting of the rock samples

SUZUKI, Takeshi[1*] ; YOSHIMURA, Ryokei[2] ; OSHIMAN, Naoto[2]

[1]Graduate School of Science, Kyoto University, [2]Earthquake Hazards Division, Disaster Prevention Research Institute, Kyoto University

For the purposes of oil explorations and surveys of active faults, electrical and electromagnetic methods are powerful tools to reveal the underground properties, since the resistivity images have high sensitivity to the existences of the fluid. Obtained resistivity images are interpreted in relation to the porosity of rock and its connectivity with several mixing lows. In order to verify the applicability of such interpretations, we plan to carry out high-density electrical soundings for hand size rock samples whose other geological characteristics are well known.

As the first step of laboratory experiments, we made numerical simulations to estimate the optimal electrode arrangement and the scale of detectable anomalies. In this presentation, we will report the results of numerical simulations and the future plans of laboratory experiments.

Keywords: rock experiments, electrical conductivity, numerical simulations