

Toward development of seismic and EM joint inversion to elucidate detailed information on the crustal fluids

Makoto Uyeshima[1]; Yasuko Takei[1]; Tsutomu Ogawa[1]; Yoko Morita[1]; Aitaro Kato[1]

[1] ERI, Univ. Tokyo

In Japan, water is continuously supplied from subducting slabs by dehydration. In order to estimate crustal rheology and to synthesize tectonic process such as seismic and volcanic activities beneath the island arc, the crustal water content and its connectivity are one of the most important parameters. Owing to significant improvements in instruments, data processing methods and inversion schemes, we are now coming to a stage that we can obtain detailed crustal seismic velocity and resistivity structures and that some results are mutually consistent in terms of determination of detailed features of the crustal fluids.

However, since seismic and EM prospecting methods have respectively possess their own inaccuracies and problems, merely joint interpretation of seismic and resistivity structures, which were independently determined, sometimes results in erroneous interpretations. Thus joint inversion of seismic and EM data will be desirable to derive more accurate information of the crustal fluids. In this presentation, we discuss about some strategies for realizing the joint inversion and examine necessary procedures.