

Large-scale electrical resistivity structure around the Western Part of Shikoku

*Ryokei Yoshimura¹, Ken'ichi Yamazaki¹, Yasuo Ogawa², Shingo Kawasaki¹, Jun Nakagawa¹, Shintaro Komatsu¹, Itaru Yoneda¹, Yuhei Ouchi³, Atsushi Suzuki⁴, Zenshiro Saito⁴, Masahiro Teraishi¹

1.Disaster Prevention Research Institute, Kyoto University, 2.Volcanic Fluid Research Center, Tokyo Institute of Technology, 3.Graduate School of Science, Kyoto University, 4.Graduate School of Science, Tokyo Institute of Technology

Recent geodetic observations detect recurrent slow slip events (SSE), which occurred beneath the Bungo Channel and southwest Shikoku Island, with interval of approximately 6 years (e.g. GSI, 2010). In order to reveal a three-dimensional resistivity structure around SSE region, we are carrying out wideband magnetotelluric (MT) surveys. We also plan to establish a permanent long-term MT monitoring network that aims to detect temporal changes of resistivity structure during SSE cycle. In January 2015, we installed a long-term MT instrument as a pilot observation at Sukumo Observatory of DPRI, Kyoto University located above the eastern edge of the Bungo SSEs.

In this presentation, we will report the present state of wideband MT surveys and estimation of a large-scale electrical resistivity structure. As of February, 2016, MT surveys were performed at 28 sites by using Phoenix wideband MT instruments. In the most of sites, high quality MT responses were obtained using the BIRRP code (Chave and Thomson, 2004) for the period range 0.01 to 10,000sec. The spatial distributions of the phase tensor ellipses and the induction vectors suggest that resistivity contrasts are located around SSEs. We will show the outlines of our research project, characteristics of obtained MT responses, and report preliminary results of three-dimensional inversions.

Keywords: electrical resistivity structure, Bungo Channel, slow slip events

