

# Re-analysis of broad-band magneto-telluric data in the focal region of the 2000 Western Tottori Earthquake (Mj=7.3)

Nakamura, K.<sup>1</sup>, Aizawa, K.<sup>2</sup>, Asamori, K.<sup>3</sup>, Oshiman, N., Shiozaki, I.<sup>4</sup> and The 2001 Research Group for Crustal Resistivity structure

<sup>1</sup>Department of Earth and Planetary Sciences, Graduate school of Science, Kyushu University, Japan, [nakamura.kensuke.996@s.kyushu-u.ac.jp](mailto:nakamura.kensuke.996@s.kyushu-u.ac.jp)

<sup>2</sup>Institute of Seismology and Volcanology, Faculty of Science, Kyushu University

<sup>3</sup>Japan Atomic Energy Agency

<sup>4</sup>Graduate School of Engineering, Tottori University

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## SUMMARY

We show the resistivity structure around the focal region of the 2000 Western Tottori Earthquake (M7.3). The purpose of this study is to investigate the relationship between the rupture of the mainshock and the resistivity structure, which was not discussed in previous magneto-telluric (MT) study. In particular, we focus on the resistivity structure around the zones where the rupture started and arrested. In previous study, three-dimensional resistivity structure around the focal region was determined using 52 broad-band MT sites and a deep conductive body in the middle crust to the upper mantle was imaged on the southwestern side of the mainshock rupture.

In addition to the 52 sites, we added 12 broad-band MT sites. Further, we recalculate the MT response functions and used full components of the impedance tensor and geomagnetic transfer functions to image three-dimensional resistivity structure. The new points of the analysis are summarized as follows. (1) recalculation of MT response functions. (2) using full impedance tensor and geomagnetic transfer functions in three-dimensional inversion. (3) including oceans in three-dimensional inversion. We compare three-dimensional resistivity structure with previous study and discuss the factors contributing to the difference in the structures. Also, we investigate the relationship between the resistivity structure and the slip distribution of the mainshock, as well as occurrence of the aftershocks.

**Keywords:** Magneto-telluric, The 2000 Western Tottori Earthquake