

## Electrical conductivity structure beneath backarc side of Chubu District, Central Japan, revealed by the Network-MT

Makoto Uyeshima<sup>1\*</sup>, Satoru Yamaguchi<sup>2</sup>, Hideki Murakami<sup>3</sup>, Toshiya Tanbo<sup>4</sup>, Ryohei Yoshimura<sup>5</sup>, Hiroshi Ichihara<sup>6</sup>, Kentaro Omura<sup>7</sup>

<sup>1</sup>Earthquake Research Institute, The University of Tokyo, <sup>2</sup>Department of Geosciences, Graduate School of Science, Osaka City University, <sup>3</sup>Department of Applied Science, Faculty of Science, Kochi University, <sup>4</sup>Tateyama Caldera Sabo Museum, <sup>5</sup>Disaster Prevention Research Institute, Kyoto University, <sup>6</sup>Japan Agency for Marine-Earth Science and Technology, <sup>7</sup>National Research Institute for Earth Science and Disaster Prevention

Series of the Network-MT survey was performed in backarc side of Chubu district since 2005. The 1st campaign was performed in the vicinity of the Atotsugawa fault area (source region of the Hietsu Earthquake) from 2005 to 2008. We extended the research region to the west and the 2nd campaign was performed in the vicinity of the Noubi earthquake source region from 2011 to 2013. Since both the Philippine Sea Plate and the Pacific Plate are subducting beneath the area, and the Niigata-Kobe Tectonic Zone, where most significant strain rate accumulation was detected before the 2011 great Tohoku Earthquake by the dense GPS array (GEONET), we aimed at obtaining wide and deep resistivity structure beneath backarc side of Chubu district to investigate dehydration process on the subducting plates and generation mechanism of the Niigata-Kobe Tectonic Zone.

After showing two 2-D cross sections beneath Fuchu-Akigami and Takamatsu-Tsukechi lines obtained from the 1st campaign, 3-D image in the vicinity of the Noubi Earthquake source region obtained from the 2nd campaign will be shown. The 1st and 2nd image show clear correlation between the NKTZ (or active faults in the zone) and crustal and/or mantle wedge conductor, which indicates existence of connected fluids. The 3rd image reveals deep seated conductor beneath along the NKTZ, probably indicating existence of dehydration from the deep seated Pacific slab. Another conductor exists near the surface along the Noubi earthquake source fault, whereas mid-crust beneath the fault zone is highly resistive.

Keywords: resistivity structure, backarc side of Chubu District, Network-MT, Niigata-Kobe Tectonic Zone, crustal fluid