

## Results of 2015 seismic survey for the research project on seismic and tsunami hazards around the Sea of Japan

\*Naoko Kato<sup>1</sup>, Hiroshi Sato<sup>1</sup>, Tatsuya Ishiyama<sup>1</sup>, Shigeru Toda<sup>2</sup>, Shinji Kawasaki<sup>3</sup>, Susumu Abe<sup>3</sup>,  
Research group for 2015 Maizuru Maizuru seismic survey<sup>1</sup>

1.Earthquake Research Institute,University of Tokyo, 2.Aichi Educational University, 3.JGI. Inc.

To estimate Tsunami and seismic hazards along the coastal area of Sea of Japan, more detailed survey to identify source faults is needed. A research project funded by MEXT named "the integrated research project on seismic and tsunami hazards around the Sea of Japan" began in FY 2013. To obtain the information of crustal structure, we performed seismic reflection profiling off-Maizuru area in the southwestern part of Honshu, Japan. The location of seismic line was designed to connect to the Shingu-Maizuru deep seismic survey across the Southwest Japan arc (Ito et al., 2006). Multi-channel seismic reflection data were acquired along seismic line off-Maizuru. The length of seismic line is 67 km. We used a gun-ship with 1950 cu. inch air-gun and towed a 2-km-long, streamer cable with 168 channels. On land we deployed 4.5 Hz geophones at 100 m interval and formed a 17-long-seismic line. All air-gun shots were recorded on this seismic line. Seismic section of marine part portrays the image down to 2 to 3 seconds. Based on seismic facies, we can divide it into three units. Lowest unit is marked by poor seismic reflection and considered to correspond to pre-Neogene rocks. Middle unit is characterized by northward-dipping coherent reflectors and corresponds to Miocene mainly sedimentary rocks. The top unit, above 0.5 sec (TWT), covers the lower units with unconformity. This unit corresponds to Quaternary Tottori-Oki Group (Yamamoto et al., 1993). Reverse fault is observed in the northern part of the seismic section. The reverse faulting is a result of reactivation of normal fault associated with the formation of the Sea of Japan. Along this seismic line, the reverse faulting does not show the deformation of the Quaternary unit. In the middle part of the seismic line, a high angle fault displaced the top unit. Beneath the land section, subhorizontal reflectors is observed between 4.5 to 5.5 second (TWT). It seems to be a northward extension of the mid-crustal reflectors in the Shingu-Maizuru seismic section (Ito et al., 2006).

Keywords: Sea of Japan, crustal structure, seismic reflection survey