

The 2nd Sea Trial of 2-D Seismic Reflection and Refraction Survey in Suruga Bay, Central Japan, by TUMSAT (1st Report)

*Kayoko Tsuruga¹, Yoshihiro Sekino¹, Jota Kanda¹, Hayato Kondo¹, Toshifumi Hayashi¹, Tetsutaro Aikawa¹, Hisatoshi Baba², Hiroshi Sugawara¹

1. Tokyo University of Marine Science and Technology, 2. Tokai University

Suruga Bay (*i.e.*, Suruga trough) is located at the plate boundary between the Philippine sea plate and Eurasia plate. It is very important to understand the overlook of subduction structure of Suruga trough to prevent and reduce earthquake disaster, but the observation and data are not enough. Therefore, we have been trying to clarify a shallow structure in this important area by means of both seismic reflection and refraction surveys since 2016 (Tsuruga *et al.*, 2017). In this report, we show the preliminary results of the 2-nd sea trial of seismic reflection and refraction surveys in Suruga Bay, Central Japan, conducted by Tokyo University of Marine Science and Technology (TUMSAT).

We conducted the 2-D seismic reflection and refraction survey in Suruga Bay, from Nov. 14 to 16, 2017. Three survey lines (*i.e.*, H29-L01, H29-L02 and H29-L03 lines) were located along the central valley of Suruga trough, in the northern and central-southern areas of Suruga Bay with a total measurement distance of about 47 km. We used our portable seismic systems of an air compressor system and streamer-cable system in 10-ft containers together with a seismic air-gun source system, some controllers and recording systems in a dry laboratory. In this observation we used a Bolt air-gun source system named 'Tri-Gun' which consists of three air-gun 1500LL (350 cu.in) with a total air volume of 1,050 cu.in. Hydrophone receivers array consists of Hydrosience digital streamer cable including 96 channel sensors with an interval of 6.25 m inside a cable of 600 m long, and SEAMAP Tailbouy to measure the location at the tail of the cable. TUMSAT research vessel 'Shinyomaru' has the following principle specifications: length, beam, and gross tonnage are 65 m, 12.5m, and 986 tons, respectively. Four temporal Katsushima OBS with 4 components were installed along a northern part of H29-L01 (Imamura *et al.*, in this meeting). Air-gun shot 1,555 points with an interval of 25 m for H29-L01 and H29-L02 but 50 m for H29-L03 under a ship speed of about 3.5 knot.

Preliminary results show some important features as follows: Reflection section of H29-L02 indicates a continuous west-tilting reflection phase which may be located around an upper boundary of the subducting oceanic plate toward west. The reflection phases were also found beneath a southern front area of Fujigawa fault in a western area of H29-L02. We also found a sedimentary layer with a thickness of ~500 m under the sea floor along the northern part of H29-L01. The details of our result will be shown in a poster presentation.

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