

Crustal structure refraction survey using Airgun-OBS in the northern part of Suruga Bay -Fujikawa fault zone- (Preliminary Report)

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As part of the exploration of the crustal structure of the Ministry of Education, Culture, Sports, Science and Technology "Priority investigation observation in the Fujikawa fault zone" (Sato et al., 2019 (the present Society); Tsuruga et al., 2019 (the present Society)), in Suruga Bay Reflection and refraction seismic survey by the Tokyo University of Marine Science and Technology, practice ship "Shinyo Maru (986 tons)" was carried out at a survey line of about 19 km (H30 - L00 main line) traversing north to east and west. In this our presentation, we present a preliminary report on the outline of Airgun-OBS structure exploration (refraction seismic survey) and the results obtained.

The H30 - L00 main line starts at the water depth of 485 m in Shizuoka, Shimizu, Okitsu City coastal area, the deepest part is 1320 m in the vicinity of the central part of Suruga Trough and the eastern end is over 500 m in the coastal area of Numazu, Heda City. It is a survey line of trough topography sandwiched by slopes. Since the distance between east and west distances in the northern part of Suruga Bay is short and the coastal area is also a fishing ground, the length of the survey line is limited to about 19 km.

For the refraction seismic survey in the main line, two sets of Tri-Gun by Bolt Co., Ltd. (total capacity 1950 in³) were towed, and at about 50 m intervals (since the shooting points were adjusted so as to be interposed between practically approximately blast occurred at intervals of 25 m), 18 sets OBS were deployed at about 980 m intervals. Typhoon 24 passed around Suruga Bay on the day of the exploration, so six of the 18 OBSs caused abnormal floating and so on, and they stranded to the coast (Nakao et al., 2019 (the present Society)), so data could not be obtained near the Suruga trough central axis. However, good records were obtained with 12 OBS.

Analysis is ongoing. Looking at the state of each Record Section obtained, the first arrival data can be clearly confirmed throughout the survey line, but a complex structure is presumed because it is also a line surrounding the plate boundary. The earliest layer of apparent velocity is about 6.8 km / sec, and the velocity structure model is estimated to be roughly 5-layer structure. The sedimentary layer of the first, the second and the third layer (acoustic basement layer) are inclined to the west side towards the Suruga Bay central axis, and the reflection cross section (Tsuruga et al., 2019 (the present Society)) and Match. Detailed structure model results will be reported in this presentation.

We have greatly cooperated and inconvenienced the Yui Port Fishery Cooperative Association, Shimizu Fisher Cooperative Cooperative Association and Toda Fisher Cooperative Cooperative Association for the establishment of OBS.

Keywords: Suruga Bay, OBS, Crustal Structure