

Laboratory Seismic Exploration Experiment for Education and Demonstration

*Osamu Kuwano¹, Ayako Nakanishi¹, Mikiya Yamashita¹, Takatoshi Yanagisawa¹

1. Japan Agency for Marine-Earth Science and Technology

We developed a laboratory experiment to simulate a seismic refraction survey for educational purposes. The experiment is a tabletop scaled experiment using the soft hydrogel as an analog material of a layered crust. Therefore, we can conduct the seismic exploration experiment in a laboratory or a classroom. The softness and the transparency of the gel material enable us to observe the wave propagation with our naked eyes, using the photoelastic technique. By analyzing the waveforms obtained by the image analysis of the movie of the experiment, one can estimate the velocities and the structure of the gel specimen in the same way as an actual seismic survey. We report details of the practical course and the public outreach activities using the experiment.

Keywords: Analog experiment, Hydrogel, Seismic exploration, Image analysis