

## A high school class about seismic exploration below schoolyard as a collaboration with university

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Fig.1 Photo of the experiment. The student is generating seismic wave by using wooden hammer.

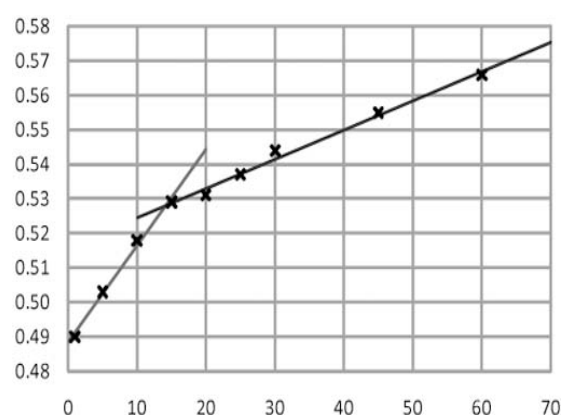


Fig.2. Travel time curve obtained from the present experiment.

An experimental science class, "Let's explore below the schoolyard using seismic waves", was conducted at a high school in Tochigi prefecture as collaboration between university and high school with financial support of the Science Partnership Project (SPP) by Japan Science and Technology Agency (JST).

In this project, a university professor had a class in the high school about the seismic exploration with an experiment at schoolyard in order to investigate the underground velocity structure. Seismic signals those were generated by a large wooden hammer (see Fig 1) and observed 9 seismometers installed along a 60 m line were recorded by a seismological data acquisition system with 32 ch inputs.

After the outside activity students moved to a computer room and analyze data. First, they stacked more than 100 seismic waves manually for improving S/N ratio. Then they read arrival times of initial motions at each seismometer and calculate velocity structure below the schoolyard. Students have got a travel time curve shown in Fig.2, which implies a typical horizontally layered structure with a slow surface. Finally, they succeeded to obtain the velocity of seismic wave on the surface at 350m/s, in the second layer at 1780m/s, and the thickness of the surface at 5.5m, which are very reasonable values according to geology data around.

Most of students attended the class showed positive attitude and high interest after the class in the post questionnaire. Therefore, present practice is considered enough effective to improve students' interest toward Geosciences.

On the other hand, there are still some difficulties to work out similar activities in high school. The first reason of the difficulty is that we need to collect equipments for seismic exploration. We think, however, universities and institutes who have seismological sections can collaborate with

high schools by supplying necessary equipment such as seismometers and data loggers to do similar experiments.

Keywords: SPP, colaboration between Univ and HS, earth science education, seismic exploration experiment