

## Digital restoration from paper records of Multi-channel seismic data in and around the Sagami trough

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To investigate the entrance of the Philippine sea plate is important in order to understand the formation process of asperity distribution below the Kanto district. Many multi-channel surveys have been conducted in and around the Sagami trough by the Hydrographic and Oceanographic Department Japan Coast Guard in 1980 - 1990. If we re-analyze the all data comprehensively, we could obtain the detailed plate images and provide information about a relation between asperity and structure. But a long period of time has deteriorated the master recording media to become non-reproductive. The purpose of this study is to restore the data and to convert them to a general format, SEG-Y for practical digital processing.

We tried to restore 15 lines of four multi-channel surveys (JHD1980, JHD1984, JHD1988, JHD1990) in this study. The total length is 841 km. Original sources are documents and plotting cross sections (A0 size) stored in the Hydrographic and Oceanographic Department Japan Coast Guard. Geometry information and velocity structure used for former analysis are also restored. The complete data set enables to analyze immediate seismic analysis.

Restoring procedure is shown as follows. (1) Scan, (2) Vectorize, (3) Filter, (4) Mute and (5) Convert to SEG-Y format are performed in turn. Quality of the original plot directly influences one of the restored data. Therefore, we paid attention to detail in the scanning operation.

Although a part of the data could not be restored, we obtained digital data with adequately good quality on the whole. To test whether the data can be used for practical analysis, we tried to perform migration process and depth conversion process. In the processes, we applied velocity structure used in the former analysis. Some of cross sections obtained after processes provided clear images, the others, however, showed inadequate images, which might attribute in inappropriate velocity structure used for the processing. But the results proved that the data had enough potentials for digital analysis.