Development of an Integrated Geophysical and Geological Information Database for Strong-motion Evaluation

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We have developed an integrated geophysical and geological information database to support researches on earthquake disaster mitigation since 2003. The database consists of the following data sets; (1) the data sets obtained by deep borings and reflection surveys that were carried by the NEID, (2) the data sets gathered in the National seismic hazard mapping project, (3) the data sets obtained from surveys of active faults and underground structures of sedimentary basins, which were carried by funds of the MEXT, and (4) the data sets on surface soil structures in the Kanto region.

We have developed the system using the XML database engine since we aim to use the XML database on computer network. We can access the data sets on the XML database using GIS.

We also have studied the modeling of surface soil structures in the Kanto region using the data sets in the XML database. We have made layer models for surface soil structures in the Tokyo Metropolis, Kanagawa Prefecture, Chiba Prefecture, Saitama Prefecture, Ibaraki Prefecture, Tochigi Prefecture and Gunma Prefecture. The layer models are expected to be used for simulations of strong-motion waveforms. We have verified the layer models using the strong-motion records obtained by the SK-NET, K-NET, KiK-net.

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