Seismic tomography model on Google Earth

Yasuko Yamagishi[1]; Hiroshi Yanaka[2]; Seiji Tsuboi[3]

[1] IFREE, JAMSTEC; [2] Fujitsu Ltd.; [3] IFREE

Visual presentation of various geophysical and geochemical data together gives us intuitive sight of the Earth's interior. Especially, an overlay plot of geochemical data of rock and seismic tomography data are useful for correlating internal temperature anomalies to geochemical anomalies. Each data, however, has its own format and own presentation tool. In this study, we aim to display both geochemical data of rock and seismic tomography data together. We adopt Google Earth as a geoscience data browser. Google Earth makes use of a XML called 'KML' to display graphical features. We have developed softwares to convert geochemical data of rock and seismic tomography data to KML files.

The seismic tomography data are provided by ASCII text files. Our software converts the original seismic tomography data to a KML file for each depth. It can deal with both global and local tomography data. The software can extract a part of the original data so that you can select a displayed area of the tomography model. In addition, you can make a KML file of a cross section along any line you like. When you make a KML file of a cross section, you can select a depth range to be displayed. The cross section of the seismic tomography model stands on the Earth's surface. You can choose where to display the data at each depth, either on the Earth's surface or above the surface. The altitude at which the tomography data is displayed on Google Earth is equal to the distance from CMB to the depth of the model. This tomography data is positioned in the cross section.

We have developed a software to convert geochemical data and seismic tomography data to KML files, which give us overlay views of these data on Google Earth. We are now planning to provide our conversion software online (http://www.jamstec.go.jp/pacific21/TM