Gridding of geological maps and comparison to geophysical data

*Yasushi Harada[1], Hiroto Tohma[1]

1. School of Marine Science and Technology, Tokai University

The Seamless Digital Geological Map of Japan by Geological Survey of Japan, AIST is the product of the merged 1:200,000 geologic quadrangle maps covering the entire country of Japan. This is very popular and useful to ordinary people, but sometimes awkward to do statistical analysis because it is not in the grid format of logitude, latitude, and physical values. To grid this map, first we constructed a method of gridding from vector data from the AIST web site. Converting the vector data to KML files, we extracted positiones of boundaries of polygons and the geologic data. It is not simple, however, to create grid data inside the polygons because those polygons are not necessary closed curves. Second we applied a another method for gridding the data, instead of using vector data, we converted the raster map data into X, Y, RGB (RGB indicates geological featutes). And we converted X, Y, RGB into longitude, latitude, physical values such as Vp, densities, ages, and so on. We did some statistical analysis between the new geological grid data and geophysical data such as tomographic model of seismic wave velocities and gravity anomalies of Japan.

Keywords: Seamless Digital Geological Map of Japan, seismic wave velocities, gravity anomalies

