

CD-ROM publication of 'Geothermal data processing collections for the Hohi, Oita and Kyushu areas, Japan' (GSJ, DGM TG-3)

Hiroshi Shigeno[1]

[1] G.S.J., A.I.S.T.

<http://staff.aist.go.jp/hiroshi-shigeno/index.html>

The 'Study on geothermal resources assessments using GIS' has been conducted as a basic study program in the Institute for Geo-Resources and Environment, AIST (e.g. Shigeno and Sakaguchi (2002), Shigeno (2004, 2005a, 2005b)). The characteristics of the study is in the methods using simplified-standardized-commonized data file formats, not depending on specific commercial GIS software which may have various complex short- and long-term problems. The method could be applicable to the diverse fields of resources development, environmental protection, hazard mitigation, and earth-sciences education in multidisciplinary-integrated and successive-evolutional manners.

Digital Geoscience Map, GT-3 (CD-ROM), containing an electronic summary report and various resources, has been published by Geological Survey of Japan (2007) with the purpose of facilitating wide applications of the above study results (FY 2001-2005) for the Hohi, Oita and Kyushu areas. This CD-ROM contains the following five large folders, and essential files in them are linked to each other by HTML.

- (0) Folder for summary report (0_Main.F)
- (1) Folder for the lists of publications and their PDF files (1_PDF.F)
- (2) Folder for a simple earth-sciences atlas for the Kyushu district (2_Atlas.F)
- (3) Folder for data and programs for case studies at the Oita and Hohi areas (3_Various.F)
- (4) Folder for other appendixes (4_Appendix.F)

The folder (2), composed of four large sub-folders, exists for the purpose of facilitating integrated processing of various kinds of electronic earth-sciences data for various purposes. The essence of this simple integration method is in commonizing various kinds of data file formats into one using longitude-latitude location system and ASCII text format (three types of LL-M, LL-PP, and LL-PPA). This folder (2) electronically provides data-file format change programs, commonized simple map-making software (QMM series), the commonized-format text data files (examples), and the mini-earth-sciences-atlas for the Kyushu district.

In the folder (3), various kinds of methods and results of case studies for the Oita area (of the 1:200,000 scale quadrangle maps) and the Hohi area (including prospecting geothermal fields located northwest to Kuju Volcano) are provided. Five main themes in large subfolders are, 3.1 Geology mesh, 3.2 Fluid geochemistry (of hot-spring and thermal waters), 3.3 Well logging (temperature, geology and rock alterations) and 3.4-3.5 Geothermal resources assessments (2-D and simplified 3-D). In each subfolder, edited data, processing programs, produced maps, their explanations and others for various subjects are classified into 7 to 16 sub-subfolders. In the subfolders 3.1, 3.4 and 3.5, 2-D and 3-D data processing is conducted in integrated, simplified-efficient and successive-evolutional manners by commonly applying the file format of 250-m mesh elevation data (DEM) by Geographical Survey Institute (also 250-m interval depth layers) to various kinds of data.

Most of the above executable programs and their source codes, developed using Microsoft Visual Basic v.6 (VB6) and FORTRAN77 on Microsoft Windows, are in this CD-ROM. The above commonized-format text data files could be easily transported to and used on various GIS software.

References

Geological Survey of Japan (2007) Geothermal data processing collections for the Hohi, Oita and Kyushu areas, Japan: Report, and data and program collections of simplified integrated-processing for the 'Study on geothermal resources assessments using GIS (FY 2001-2005)' (CD-ROM). DGM GT-3. (in Japanese with English abstract)