

Geomagnetic surveys by Geospatial Information Authority of Japan and contribution of Kakioka Magnetic Observatory

UEDA, Isao^{1*}, ABE, Satoshi¹, GOTO Katsuhiro¹, EBINA Yoritoshi¹, SHIRAI Hiroki¹

¹GSI of Japan

The Geospatial Information Authority of Japan (GSI) has been conducting geomagnetic surveys in Japan since 1948 to clarify the geographical distribution of direction, intensity of geomagnetic field and their secular variations. GSI has 3 geodetic observatories, about 100 first order geomagnetic stations, about 850 second order geomagnetic stations, and 11 continuous geomagnetic stations. Recently, we carry out continuous observation at geodetic observatories and continuous geomagnetic stations, and repetitive observation at several first order geomagnetic stations. The second order geomagnetic survey was conducted by 1968. As a result of surveys, "Geomagnetic charts" published every 10 years. Geomagnetic charts for the epoch 2010.0 is adopted the new spatial-temporal model. By the use of this model, we can get geomagnetic charts for arbitrary epoch. Then, we can realize yearly variation of magnetic components in visible. The spatial-temporal model can estimate geographical distribution and secular variations in Japan by making continuous data from repetitive data on first order geomagnetic stations and interpolating scattered stations spatially. This model needs good quality continuous data. In addition to geodetic observatories of GSI, the contribution of Kakioka Magnetic Observatory which has been conducting good quality and stably observations for 100 years is large.

Keywords: Magnetic survey, Magnetic chart, spatial-temporal model, Kakioka Magnetic Observatory