CORRELATION ANALYSIS OF GEOMAGNETIC PARAMETERS BASED ON SEASONAL CHANGES

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ABSTRACT

Geomagnetic parameters at different seasons and different latitudes have different variations. The focus on this paper is mainly to analyze the correlation of geomagnetic parameters which are horizontal (H), declination (D) and vertical (Z) based on seasonal changes. Analyses are made at the four different season's data which are winter, spring, summer and autumn. These data were acquired by the Magnetic Data Acquisition System (MAGDAS) developed by Space Environment Research Center (SERC) of Kyushu University in Japan. The data are observed from two MAGDAS station which are at Onagawa, Japan (38.44°N, 141.18°E) and Manado, Indonesia (1.44°N, 124.84°E) on year 2006. The geomagnetic data set covers three quiet days in each season based on the disturbance Kp index. In this paper, geomagnetic parameters of MAGDAS data will be discuss due to its significant in the correlation with seasons. The data was analyzed and simulated by using MATLAB programming language. The months of the year are classified into three seasons which are known as D-season, E-season and J-season based on Lloyd's seasons are used in this paper. From this project, the characteristics of geomagnetic parameters at different seasons are determined. The comparisons are made for geomagnetic parameters within middle-latitude and equatorial latitude which are at Onagawa, Japan and Manado, Indonesia respectively. At Onagawa, the observed seasonal variation was maximum in June-solstice, followed by Equinox, and least in December solstice. Meanwhile, June-solstice was maximum and Equinox-season was minimum at Manado.

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