CORRELATION ANALYSIS OF SOLAR WIND EVENTS AT DIFFERENCE HEMISPHERIC SYMMETRY BASED ON GEOMAGNETIC PARAMETERS

Thesis is presented in partial fulfilment for the award of the

Bachelor of Electrical Engineering (Hons.)

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ACKNOWLEDGEMENTS

First and foremost, I would like to state my greatest gratitude to ALLAH S.W.T that gives me an opportunity to be able to complete my final year project and thesis.

In particular, I wish to express my deeply appreciation to my project report supervisors, Mr. Muhammad Adib Bin Haron and Mr. Mohamad Huzaimy Bin Jusoh for consistent help, encouragement, guidance, critics and friendship. Without their continued support and interest, this project report would not have been the same as presented here. Also thanks to Space Environment Research Centre (SERC), Kyushu University Japan for supply MAGDAS data.

Last but not least, sincere appreciation to my beloved family, my fellow friends and anybody who involved directly or indirectly for their help, advice and support. Their views, comments and tips are very helpful.

Thank you.

ABSTRACT

The sun, the earth, and the space in-between are all connected. It creates many of space activities such as solar wind. Solar wind is responsible for such phenomena as geomagnetic storm, sub storm and aurora. Geomagnetic storm disturbances have been affecting electrical systems on the ground such as such as pipelines corrosion, power systems blackouts, railway tracks problems and disrupt cell phone communication systems. This paper presents the analysis of magnetic data by using raw data taken from Magnetic Data Acquisition System (MAGDAS) station at difference hemispheric which is at Onagawa, Japan station for Northern region and Manado, Indonesia station for equatorial region. Three components were used to analyze this variation which is H, D, and Z component. There are three events due to solar wind that are chosen to be analyzed by using MATLAB program. The events are on 9th April 2006, 14th April 2006, and 19th August 2006. The change in magnetic field ΔH was calculated to show the variation in H parameter. The events are then compared with Disturbance storm-time (Dst) that are taken from Kyoto University, Japan. The MAGDAS data are in .MGD file format. The results are useful to a significant contribution of knowledge in earth's magnetic field that related to the space activities.

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