

**PC3 AND PC5 AMPLITUDE PULSATION VARIATION TO
THE SOLAR WIND PARAMETER AT LOW LATITUDE**

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ABSTRACT

This thesis present the variation of Pc3 and Pc5 amplitude pulsation to the solar wind speed and dynamic pressure at low latitude using magnetic data collected from the Magnetic Data Acquisition System (MAGDAS) station in Langkawi island (LKW) Malaysia between 2008 and 2009. The variations are explained by selecting 10 days of maximum and minimum solar wind speed and wind pressure in the period of two years. Results show that the days with high wind speed above 600km/s has mean amplitude Pc3 0.18nT and Pc5 0.93nT. The wind speed below 300km/s produced lower Pc3 amplitude with mean 0.09nT while for the Pc5 amplitude with mean 0.31nT. The change of the dynamic pressure also will change the Pc3 and Pc5 amplitude pulsation. According to the result, the dynamic pressure must be related to the change of Pc3 and Pc5amplitude.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Geomagnetic Pulsation or recently called Ultra Low Frequency wave plasma is hydromagnetic wave produced by processes in the magnetosphere and have been identified by many researchers.[1] The wave have seen from the ground were classified into two classes, there are continuous pulsation (Pc) and irregular pulsation (Pi).[2] The frequencies range of this magnetic pulsation is from 1mHz to greater then 10Hz and appear as quasi-sinusoidal oscillation in magnetometer recorder on the earth surfaces. Base on previous researchers the size of the magnetosphere is proportional to the wave frequency, where the lowest frequency pulsation has the largest amplitudes.[3]

Pc3 magnetic pulsation is one of continuous Pulsation which happens in period between 10 to 45T(s) and has frequency range 22 to 200Hz.[4] While Pc5 magnetic pulsation have been reported to be related directly with solar wind have frequency range between 2 to 7mHz and happens in period 150 to 600T(s).[5] The Kelvin-helmholtz instability on the magnetopause is known to play the role of the greatest contributor to the