

A STUDY OF L-DEPENDENT PC3 PULSATIONS OBSERVED BY LOW EARTH ORBITING CHAMP SATELLITE

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This study is about the class of continuous pulsations termed Pc3, which are naturally occurring in the magnetosphere, and are characterised by a period ranging from 10 to 45 seconds. In this work the structure of low-latitude Pc3 pulsation is investigated by comparing CHAMP and ground magnetic field measurements. Induction magnetometer data from Hermanus and Sutherland stations in South Africa were used in conjunction with low Earth orbiting CHAMP satellite observations. Two events observed on the 13 February 2002 and 18 February 2003 when CHAMP was passing over the ground stations will be presented. We observed toroidal resonant frequencies driven by a broadband frequency oscillation, observed on the compressional component which is a fast mode wave signature, varying as a function of latitude. The field line resonant frequency increased with decreasing latitude, reaching a maximum value when the satellite reached $L \sim 1.6$ and thereafter decreases as a result of larger plasma density of the upper ionosphere.

Magnetosphere, geomagnetic Pulsations, field line resonances

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