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Spectral analysis of magnetic field fluctuations during a HILDCAA event on November, 1998

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Guarnieri, F.; Echer, E.; Gonzalez, W.; Clua de Gonzalez, A.; Vieira, L.; dal Lago, A.; Prestes, A.; Schuch, N.

Interplanetary Magnetic Field (IMF) fluctuations with short period and small intensity have been correlated to HILDCAA occurrence. During these events, small variations in Dst index and large changes in auroral electrojet, measured by AE index, may be observed. The November 28-30, 1998 HILDCAA event was selected in order to analyze the dominant frequencies in magnetic field and velocity oscillations, because it is a period when Dst is quiet and without significant magnetic activity during the previous days. A visual inspection of the interplanetary magnetic field and velocity components has shown a good correlation between these oscillations and the Dst and AE geomagnetic indices. In this frequency analysis the MULTITAPER technique was used, and frequencies with a confidence level greater than 95% were selected.

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