

Characteristics of Alfvén waves with a harmonic structure in the Cusp region observed on the AKEBONO satellite

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In the cusp region of the magnetosphere, intense fluctuations of electric and magnetic fields are observed on the AKEBONO satellite passing at altitudes of a few thousand km. From the spectral analysis of these fluctuations, it is found that these events appear with burst-like structures in the small-scale upward current region and with dominant power in the range less than 2.0 Hz. It is further found that there is an odd harmonic structure with its fundamental mode at about 0.3 Hz, superimposed on the burst-like enhancements. It is suggested that a possible source of these fluctuations is the 'dispersive Alfvén waves (DAWs)' generated in the cusp region, and that the harmonic structure is formed by the interference of downward and upward DAWs.