

Study on electrostatic waves in lower-hybrid frequencies in the lobe region of earth's magnetotail observed by GEOTAIL

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We observed plasma waves in a lower-hybrid frequency range in the lobe region of earth's magnetotail. The plasma waves are observed in the transition region between the lobe region to plasma sheet boundary layer. Their electric field vectors are perpendicular to the local magnetic field. Generation of these electrostatic waves does not correlate with density and magnetic field gradient. Electrostatic waves are observed with electron beam, which is parallel to the local magnetic field, and with steady ion flow that is perpendicular to the local magnetic field. We guess that these waves are lower-hybrid waves.