



Generation of electromagnetic ion cyclotron waves in the near-Earth magnetotail during dipolarization: two-dimensional global hybrid simulation

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We employ two-dimensional global hybrid simulations to study the generation, propagation and polarization of electromagnetic ion cyclotron (EMIC) waves in the near-Earth magnetotail during dipolarization. In our simulation, EMIC waves with left-hand polarized signals originate in the low-latitude magnetotail as a result of the ion temperature anisotropy which is due to ion heating by Alfvén waves. Subsequently, EMIC waves can propagate along the ambient magnetic field toward high-latitudes. Our work provides one possible mechanism for the generation of EMIC waves observed in the near-Earth magnetotail.