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Are the Electromagnetic Whistlers Associated with Magnetotail Reconnection Driven by Temperature Anisotropy or by Electron Phase Space Holes?[1] MARTIN V. GOLDMAN, DAVID L. NEWMAN, Univ of Colorado - Boulder, JONATHAN EASTWOOD, Imperial College, London, UK, GIOVANNI LAPENTA, KU, Leuven, Belgium — Kinetic simulations of magnetotail reconnection and theoretical analysis have recently been used to show that bipolar fields associated with electron phase space holes on separatrices near an x-point can efficiently emit electromagnetic whistler waves [Goldman, et al., *Phys. Rev. Lett*, **112**, 145002 (2014)]. It is shown here from the same simulation at later times that hole emission of whistlers also occurs near the pile-up front (dipolarization front) associated with magnetotail reconnection. In addition, a more general kinetic theory analysis of Čerenkov emission of whistlers by holes is performed which includes electron temperature anisotropy and enables the comparison of Čerenkov emission of whistlers by holes with whistler instability due to temperature anisotropy in regions where both anisotropy and holes are present. Observations of whistlers and holes near dipolarization fronts [e.g., Deng, et al., *J. Geophys. Res.* **115**, A09225 (2010)] are discussed in the context of these studies.

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