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Simulations of instabilities in the symmetric reconnection layer with a moderate guide field JONATHAN NG, University of Maryland, College Park, NASA Goddard Space Flight Center, LI-JEN CHEN, NASA Goddard Space Flight Center, ARI LE, ADAM STANIER, Los Alamos National Laboratory, SHAN WANG, University of Maryland, College Park, NASA Goddard Space Flight Center, NAOKI BESSHO, NASA Goddard Space Flight Center — Recent Magnetospheric Multiscale (MMS) observations have revealed the importance of the nonlinear evolution of waves in the lower-hybrid frequency range during magnetotail reconnection, in a manner different from what is typically expected of the lower-hybrid drift instability in thin current sheets. We perform 2- and 3-D kinetic simulations of reconnection in the moderate guide field regime in order to study the excitation of these waves and how they affect the reconnection dynamics close to the x-line and in the exhaust. In particular, the role of the waves in demagnetizing electrons and causing agyrotropic electron distribution functions will be explored.

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