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Thomas H. Otway*, 500 W 185th Street, New York, NY 10033. *Wave propagation in the cold plasma model.*

An elliptic-hyperbolic equation which models wave propagation through zero-temperature plasma is analyzed. Boundary-value problems formulated on the basis of conventional electromagnetic theory turn out to be classically ill-posed in this context. Nevertheless, conditions may be prescribed under which a solution to the Dirichlet problem exists in an appropriate sense. Conditions are given for distribution, weak, and strong solutions. (Received May 20, 2011)