1056-35-560   **Stephen Pankavich*** (`sdp@uta.edu`), 411 S Nedderman Dr, Box 19408, Arlington, TX 76019.
Analysis and Simulation of a One-dimensional Plasma Model.

The fundamental kinetic description of a collisionless plasma is given by the Vlasov-Maxwell (VM) equations. When relativistic velocity effects are not present in the model, the existence and regularity of classical solutions to this system of nonlinear hyperbolic PDE is still unknown, even for the lowest dimensional representation. We consider a one-dimensional model problem which displays the identical difficulties as (VM) and present analytical and numerical results concerning the regularity and behavior of solutions. (Received September 12, 2009)