Abstract Submitted
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Plasmas via computer simulations VICTOR BAUTISTA, ANDREW WALLACE, Angelo State University — One of the behaviors of plasma is that they sometimes act like a collection of individual particles. Our purpose was to study how one charged particle in plasma behaves in a self-consistent electric field and external uniform magnetic field. We did this by setting up a self-consistent algorithm that given initial position and velocity coordinates of an ion, calculates the electric field and Lorentz force on the ion. This force changes the velocity and coordinates of the ion. These new coordinates are used to calculate a new electric field and update the Lorentz force. New coordinates are calculated and this algorithm is repeated. Results were then plotted for several initial conditions. Both synchronous motion and chaotic motion were found for particular values of magnetic field.

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