

Abstract Submitted
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Visualization and Analysis of Landau Damping Simulations

EMMA HOGGAN, Brigham Young University — Landau damping is a fundamental behavior of plasma physics in which electrostatic waves propagating in collisionless plasma become damped as individual particles exchange energy with the wave. While we have a general understanding of this process, not all of the details are completely understood. In our research, we use MATLAB and other computer applications for visualization and analysis of data from electron plasma simulations created by Dr. Grant Hart. These visualization techniques include generating animations of how the particle midplane velocities evolve and investigating the change in kinetic energy stored by the particles over time. Through these efforts we hope to reveal new information and a more comprehensive understanding about the discrete particle motions involved in the Landau damping process.

Emma Hoggan
Brigham Young University

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