

Abstract Submitted
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Mechanism of Electron Heating in Radio Frequency (RF) Capacitive Discharges ALAN WU — Using a fixed ion background to focus on the electron physics, an investigation is conducted to examine the heating mechanisms of the electrons using PIC simulation. The pressure is varied and after running the simulations to steady-state, necessary data are gathered in order to calculate the effective collision frequency. The pressure dependence of collision frequency depends upon the heating mechanism: ohmic heating results in a collision frequency proportional to pressure, and stochastic heating results in a collision frequency independent of pressure. The heating mechanism that occurs is important in understanding how to control the heating in the plasma. Results are as expected for normal operating ranges, with abnormalities that must be resolved at really high and low pressures.

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