

Abstract Submitted
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Plasma Sheath dependence on Power to the Electrode NICK WEINER, WILLIAM THEISEN, Ohio Northern University — Plasma is an ionized gas often considered to be the fourth state of matter. Since plasmas consists of positively and negatively charged particles, like electrons and positively charged ions, plasmas will often behave quite differently than neutral gasses particularly in electric fields, magnetic fields, and near the plasma boundaries. A plasma that is in contact with a material wall, will form a sheath near the wall with a very high electric field inside. When several dust particles are placed in the plasma, they will float near the edge of the sheath, and therefore the motion of these particles can help characterize the sheath. A metal rectangular confining well was placed upon a negative electrode, then two dust particles were placed in this metal rectangular confining well. We varied the power to the electrode and gathered data on a variety of oscillation modes, such as the center of mass mode, the breathing mode, and the rotation mode.

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