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Anisotropic interaction forces between two vertical particles in the plasma sheath JAY KONG, LORIN MATTHEWS, TRUELL HYDE, CASPER - Baylor University — In a GEC reference cell, charged dust grains are levitated above the negative electrode, usually forming horizontal layers in the plasma sheath. Fast-moving ions in the sheath generate wake fields, creating vertical particle chains where the interaction forces between each particle in a pair are generally different due to the wake-field effect. This presentation will focus on an attenuated oscillation method designed to examine the resulting anisotropic interaction forces. This method is based on an experimental technique whereby dust particles are raised to a height Δh above their natural equilibrium employing an applied DC bias. Removal of this DC bias causes the dust particles to oscillate with attenuated amplitude, eventually returning to their original equilibrium position. The resulting oscillation spectrum displays features unique to the interaction between the particles. Recent experimental results will be presented.

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