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Interparticle Forces Between Dust Particles Confined within a Glass Box in a GEC Chamber JIE KONG, TRUELL HYDE, LORIN MATTHEWS, KE QIAO, ZHUANHAO ZHANG, CASPER - Baylor University, BRANDON HARRIS, GARY SHETLER, STEVE RAPP, JIMMY SCHMOKE, MIKE COOK, CASPER-Baylor University — The additional confinement provided by a glass box placed on the lower electrode of a GEC rf reference cell easily allows the generation of individual long vertical dust chains. This extended 1D vertical dust structure is ideal for the investigation of dust crystal vertical dispersion relations. It can also be used as a probe to allow the investigation of plasma parameters within the sheath. In this work, the oscillation spectrum of an extended 1D dust particle chain, driven through the addition of an external DC bias applied to the lower electrode, was examined. The vertical oscillation spectrum obtained using this experimental setup will be discussed and shown to exhibit significant differences as compared to the spectrum obtained for a dust particle pair without the glass box confinement.

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