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Interactions between multiple sized particle bilayers ANGELA DOUGLASS, BRANDON DOYLE, VICTOR LAND, LORIN MATTHEWS, TRUELL HYDE, CASPER - Baylor University — Numerous experiments have been conducted on dusty plasmas using monodisperse micron-sized dust particles. In a GEC reference cell, these dust particles levitate above the lower electrode at a height where the gravitational and the electrostatic forces on the particle are equal. In this case, particles with the same charge to mass ratio float at nearly the same height, creating a thin layer. By adding particles with a different charge to mass ratio, distinct layers can be formed which often exhibit interesting interactions with one another. For instance, particles in the lower layer will align with particles within the upper layer forming vertical chains due to the "ion wakefield" which creates an asymmetric force between them. In this paper, vertical interactions between layers of dust for various particle sizes, numbers of particles, and layer separations will be discussed.

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