

Abstract Submitted  
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**Studying the interaction between two dust clouds of differently sized particles in complex plasma** STEPHEN PICKETT, CASPER, Baylor University, Waco, TX 76798, USA, VICTOR LAND, DIVYAPRAKASH SINGH, Participant in Baylor University's High School Scholars Summer Research Program, DIANA BOLSER, Participant in Baylor University's NSF Research Experience for Undergraduates Program, LORIN MATTHEWS, TRUPELL HYDE, CASPER TEAM — Dust particles levitate in the sheath of an argon RF discharge in a modified GEC cell. Radial confinement is created by a circular cutout in a top-plate covering the lower electrode. By using differently sized MF particles, two 2D dust crystals are formed, levitated at different heights. By heating or cooling the lower electrode, the crystals are moved relative to each other by thermophoresis. When the crystals are far apart, two vertically aligned layers are visible. Upon approach, layer-splitting occurs and a *zig-zag* pattern appears. Upon further compression, longer aligned chains form. This behavior is studied using experimental data, as well as by using a combination of a fluid model and N-body code.

Victor Land  
CASPER, Baylor University, Waco, TX

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