

Abstract Submitted
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External DC Biases in Complex Plasmas TRUELL HYDE, KE QIAO, JIE KONG, LORIN MATTHEWS, JORGE CARMONA REYES, JERRY REAY, MIKE COOK, JIMMY SCHMOKE, CASPER - Baylor University — Dust particles imbedded within plasma are charged by collisions with free electrons and ions in the plasma. If the ratio of the inter-particle potential energy to the average kinetic energy is sufficient, the particles form a “liquid” structure with short range ordering or a crystalline structure with longer range ordering. When the dust particles form a crystalline structure and reside within two-dimensionally extended lattice planes, different stable crystalline phases have been observed experimentally. It has recently been found that an external DC bias allows for the formation of new energetically favored structures. Experimental results will be discussed and shown to be in good agreement with current theoretical predictions.

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