

Abstract Submitted
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Configuration phase transitions in small Debye clusters T.E. SHERIDAN, Ohio Northern University — We consider the configuration phases of a dusty plasma consisting of $n \leq 10$ identical particles confined in a two-dimensional biharmonic well. The ground state configuration depends on three parameters: n , the Debye screening parameter κ and the well anisotropy α^2 . Changes in any of these parameters are predicted to cause continuous or discontinuous transitions between qualitatively distinct ground state configurations. We have experimentally measured ground state configurations as the well anisotropy is varied. Both continuous and discontinuous structure transitions are observed. Experimental results show good agreement with model predictions.

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