

Abstract Submitted
for the GEC08 Meeting of
The American Physical Society

Electric dipole moments in conducting particle Coulomb crystals

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— Coulomb crystals have been studied extensively, but in general assuming the constituent dust particles are comprised of some form of insulating material. Crystals formed from particles composed of conducting materials should exhibit differences in behavior due to the free electrons on the particle surface, which create a completely different surface charge distribution and electric dipole moments than those seen in insulating particles. A molecular dynamics (Box_Tree) simulation is employed to investigate the structure and dynamics of conducting particle systems, including electric dipole effects. The results are compared to experimental data from ordered dusty plasmas systems comprised of gold-coated particles.

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Date submitted: 04 Jun 2008

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