

Abstract Submitted  
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**Phase transitions in charged colloidal suspensions** GREGG LOIS, COREY O'HERN, Yale University — Experiments on charged colloidal suspensions suggest that their structure and dynamics are sensitive to small variations in the amount of charge deposited on each particle. We numerically explore the phase diagram of charged colloidal suspensions for different values of temperature and charge polydispersity. For increasing charge polydispersity we find that the crystalline ground state is no longer accessible at low temperature and the system forms a glass. We compare the dynamic signatures of this state to the properties of hard-sphere colloids with size polydispersity. We also observe spatial and temporal inhomogeneities in the glassy state and examine the length and time scales over which they persist.

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