

Abstract Submitted
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Model for Relaxor Ferroelectrics¹ GIAN GUZMAN-VERRI, CHANDRA VARMA, Department of Physics and Astronomy, University of California at Riverside — We consider a model of a lattice made of polarizable unit cells with local and dipole interactions and disorder. Without disorder, it is well known that dipole interactions alone do not lead to ferroelectricity. We show by a cluster expansion in disorder and by a high temperature series expansion that in the presence of sufficient disorder, the model with both local and dipole interactions has locally correlated regions at low temperatures but has no long-range order. We compare our results with measurements of the static and dynamic structure factor by neutron scattering [1]. References: 1. S.N. Gvasaliya, B. Roessli, R.A. Cowley, P. Huber, S. Lushnikov, *J. Phys.: Condens. Matter* 17 4343 (2005).

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