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Polaron Glass in $La_{0.35}Pr_{0.275}Ca_{0.375}MnO_3$[1] MARK BURKHARDT, Stanford University and SLAC National Accelerator Laboratory, M.A. HOSSAIN, S. SARKAR, J. STÖHR, SLAC National Accelerator Laboratory, Y.-D. CHUANG, A.G. CRUZ GONZALEZ, A. DORAN, A. SCHOLL, A.T. YOUNG, Advanced Light Source, Lawrence Berkeley National Laboratory, Y.J. CHOI, S.-W. CHEONG, Rutgers Center for Emergent Materials and Department of Physics & Astronomy — Manganite compounds in the $La_{1-x-y}Pr_yCa_xMnO_3$ series are known for exhibiting phase separation over a large temperature range. We combined the x-ray photoemission electron microscopy (PEEM) and resonant elastic soft x-ray scattering (REXS) techniques to study the interplay between the ferromagnetic and charge-ordered/antiferromagnetic phases, respectively, in $La_{0.35}Pr_{0.275}Ca_{0.375}MnO_3$. We found a polaronic glassy state at intermediate temperatures, when the material is dominated by charge- and orbital-order domains. When the sample is cooled below T_C, the magnetization increases, accompanied by a relaxation of the lattice deformations that accompany the polaron glass.

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Mark Burkhardt
Stanford University and SLAC National Accelerator Laboratory

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