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Testing polaron coherence and the pairing symmetry in cuprate superconductors by local probe methods ANNETTE BUSSMANN-HOLDER, Max-Planck-Institute for Solid State Research, HUGO KELLER, Universität Zürich, JOSE MUSTRE DE LEON, University of Merida, ARNDT SIMON, Max-Planck-Institute for Solid State research, ALAN BISHOP, Los Alamos National Laboratory — A variety of local structural probes have demonstrated that local lattice distortions take place in cuprates, which correlate with the onset of the pseudogap phase (PG) and superconductivity (SC). We show here that these lattice responses can be a consequence of polaron formation, local coherence in the pseudogap phase, and global coherence in the superconducting phase. In addition, we demonstrate that the results are consistent with a complex s+d wave order parameter in the SC phase.

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