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**Electron-Lattice Contributions to the Cuprate Electronic Structure Seen in Lattice-Strained Bi-2201** DANIEL GARCIA, University of California, Berkeley, J. GRAF, C.M. JOZWIAK, Lawrence Berkeley National Laboratory, H. EISAKI, National Institute of Advanced Industrial Science and Technology (AIST), ALESSANDRA LANZARA, University of California, Berkeley — There is continued interest in how the lattice may relate to the phase diagram in the high temperature superconducting cuprates, particularly on the hole doped side. To explore this effect of the lattice in a controlled way, we performed Angle Resolved Photoemission Spectroscopy on a series of single layered  $\text{Bi}_2\text{Sr}_{1.6}\text{Ln}_{0.4}\text{CuO}_{6+\delta}$  with substituted Lanthanide (Ln= La, Pr, Nd, Eu), with the effect of monotonically decreasing  $T_c$  with decreasing Lanthanide atomic radii. We report effects on the electron coupling to bosonic modes near the nodal point as well as effects on near antinodal states with increasing lattice strain. Straddling these regions, we also find additional evidence in the near  $E_F$  electronic states for a crossover point in the Brillouin zone we associate with a change in gap function, quasi-particle lifetime, and bosonic coupling of the electronic states.

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