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Doping Dependence of Many-Body Interactions in Cuprate Superconductors with Laser-Based ARPES CHRISTOPHER SMALLWOOD, University of California at Berkeley; Lawrence Berkeley National Laboratory, JEFF GRAF, CHRISTOPHER JOZWIAK, Lawrence Berkeley National Laboratory, HIROSHI EISAKI, ROBERT KAINDL, DUNG-HAI LEE, ALESSANDRA LANZARA, University of California at Berkeley; Lawrence Berkeley National Laboratory — Laser-based technology has opened the field of angle-resolved photoemission to a variety of new techniques. Compared to synchrotron facilities, laser experiments typically benefit from higher flux, greater resolution and bulk sensitivity, and a system that is more readily modified for specialized experiments. We demonstrate the results of using this system to probe bosonic renormalization and electron-electron effects at varied dopings and temperatures in the double-layered cuprate Bi-2212.

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