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trARPES on $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$ using Mid-Infrared Pump STEPHEN PARHAM, HAOXIANG LI, XIAOQING ZHOU, JUSTIN WAUGH, TOM NUMMY, JUSTIN GRIFFITH, University of Colorado at Boulder, ZHIJUN XU, JOHN SCHNEELOCH, RUIDAN ZHONG, GENDA GU, Brookhaven National Laboratory, DANIEL DESSAU, University of Colorado at Boulder — The field of time-resolved ARPES (trARPES) has matured greatly in the last several years and has proven a useful tool in the study of cuprate superconductivity. However, previous experiments have been limited in the pump wavelength to energies of 1.5 eV (or more), far above the relevant energy scales for superconductivity. Here we use an OPA/DFG setup to create a mid-infrared pump, with tunable photon energies from 60-300 meV, allowing us to weakly perturb the superconductivity of optimally doped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$. Here we report on the k-resolved electron and gap dynamics of $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$ under this excitation scheme.

Stephen Parham
University of Colorado at Boulder

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