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Examining non-Fermi liquid behavior through magnetoresistance in nearly continuously doped $\mathbf{La_{(2-x)}Sr_xCuO_4}$ ZAC STEGEN, ARKADY SHEKHTER, GREG BOEBINGER, Florida State University, FEDOR BALAKIREV, ROSS MCDONALD, Los Alamos National Laboratory, JIE WU, ANTHONY BOLLINGER, XI HE, IVAN BOZOVIC, Brookhaven National Laboratory — We report magnetoresistance in thin films of the cuprate superconductor $La_{(2-x)}Sr_xCuO_4$ in pulsed magnetic fields up to 65 tesla. The films are synthesized using combinatorial molecular beam epitaxy, which allows for continuous tuning of doping. They are patterned into an array of pixels with steps of $\Delta x \approx 0.0002$, which is 25 times smaller than experiments using conventional sample growth methods. These films allow a detailed analysis of the doping evolution of non-Fermi liquid magnetoresistance in the vicinity of optimal doping.

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