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Measurements of the Hall Effect and Resistivity in $La_{2-x}Sr_xCuO_{4+\delta}$ with Ultrafine Stoichiometry Resolution, $\delta x \sim 2.5 \times 10^{-4}$ JEFFREY CLAYHOLD, BRYAN KERNS, MICHAEL SCHROER, DAVID RENCH, Physics Department, Miami University, GENNADY LOGVENOV, ANTHONY BOLLINGER, IVAN BOZOVIC, Brookhaven National Laboratory — Recent reports of sharp changes of transport properties with small variations of stoichiometry in cuprate superconductors have motivated us to look for similar behavior in optimally- and over-doped $La_{2-x}Sr_xCuO_{4+\delta}$, using a recently completed system for creating and measuring samples with ultrafine stoichiometry resolution. The data are from MBE films grown with a linear stoichiometry gradient and were taken with a characterization system that can measure both the Hall effect and resistivity simultaneously at 31 different locations on the film. We will show new data for x ranging from 0.15 to 0.30.

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