

Abstract Submitted
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Novel positive magnetoresistance in lightly doped La_2CuO_4 ¹ I. RAIČEVIĆ, D. POPOVIĆ, Dept. of Phys. & Natl. High Magnetic Field Lab., Florida State Univ., C. PANAGOPOULOS, Dept. of Phys., Univ. of Crete and FORTH & Div. of Phys. & Applied Phys., Nanyang Technological Univ., T. SASAGAWA, Materials & Structures Lab., Tokyo Inst. of Technology — We have measured magnetoresistance (MR) in single crystals of $\text{La}_{1.97}\text{Sr}_{0.03}\text{CuO}_4$ and $\text{La}_2\text{Cu}_{0.97}\text{Li}_{0.03}\text{O}_4$ at temperatures $0.050 \leq T(\text{K}) \leq 70$ and fields $0 \leq B(\text{T}) \leq 18$ parallel and perpendicular to the c-axis. Our study reveals an unusual, low-field positive MR in both in-plane and c-axis transport in both materials and for both B orientations. However, while the positive c-axis MR may persist up to T as high as 40 K, the large positive in-plane MR occurs only at very low $T \ll T_{sg}$ (T_{sg} – spin glass transition temperature). In that regime, where the noise spectroscopy disclosed slow and correlated charge dynamics [1], both the in-plane and c-axis positive MR exhibit signatures of glassiness, such as memory and hysteresis. We discuss the possible mechanism responsible for this novel low-field positive MR that appears to be intimately related to the emergence of the charge glass dynamics. [1] I. Raičević *et al.*, Phys. Rev. Lett. **101**, 177004 (2008).

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