

Abstract Submitted  
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**Anomalous high-field-induced phase in underdoped  $\text{La}_{1.7}\text{Eu}_{0.2}\text{Sr}_{0.1}\text{CuO}_4$** <sup>1</sup> ZHENZHONG SHI, P. BAITY, DRAGANA POPOVIĆ, Dept. of Phys. & Natl. High Magnetic Field Lab., Florida State Univ., T. SASAGAWA, Tokyo Inst. of Tech. — We have investigated transport properties of the underdoped, stripe-ordered  $\text{La}_{1.7}\text{Eu}_{0.2}\text{Sr}_{0.1}\text{CuO}_4$  single crystals near their magnetic-field-driven superconducting transition for  $0.016 \leq T$  (K)  $\leq 40$  and magnetic fields  $H$  up to 18 T. At very low  $T$  ( $< 0.06$  K), an anomalous high-field-induced phase (HFIP) emerges in both the in-plane and out-of-plane resistivity measurements. Two temperature-independent crossing points in the magnetoresistance are identified near the boundaries of the HFIP. In addition, the HFIP exhibits signatures of glassiness, such as hysteretic behavior and memory of magnetic history. Differential resistance studies reveal nontrivial, non-Ohmic behavior, suggesting the possible presence of a vortex glass in the HFIP. A possible  $H$ - $T$  phase diagram for the underdoped  $\text{La}_{1.7}\text{Eu}_{0.2}\text{Sr}_{0.1}\text{CuO}_4$  and the nature of the HFIP will be discussed.

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