

Abstract Submitted
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Anomalous Dimension of the Electrical Current in the Normal State of the Cuprates from the Fractional Aharonov-Bohm Effect¹ KRIDSANAPHONG LIMTRAGOOL, PHILIP PHILLIPS, Univ of Illinois - Urbana — We show here that if the current in the normal state of the cuprates has an anomalous dimension, then the Aharonov-Bohm flux through a ring does not have the standard eBA/\hbar form, where A is the area, B is the external magnetic field, and e is the electric charge, but instead it is modified by a geometrical factor that depends directly on the anomalous dimension of the current. We calculate the Aharonov-Bohm flux in square and disk geometries. In both cases, the deviation from the standard result is striking and offers a fingerprint about what precisely is strange about the strange metal.

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