

Abstract Submitted
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Resistivity in the pseudogap phase of the underdoped cuprates

PHILLIP ASHBY, JULES CARBOTTE, McMaster University — The pseudogap phase of the underdoped cuprates remains poorly understood. It exhibits many anomalous electronic properties. One example is the dc-resistivity which is metallic in the copper oxygen planes, while the c -axis response is insulating. We show how this can be understood within the pseudogap model of Yang, Rice, and Zhang (YRZ). The YRZ model naturally reconstructs the Fermi surface as a function of doping. This reconstruction places limits on the remaining quasiparticles allowed to participate in transport. As a result, the model is able to reproduce the qualitative experimental signatures, including the deviations from linear resistivity in the plane, as well as the insulating response along the c -axis.

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