

Abstract Submitted
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Fermi surface and local density of states of ordered and disordered stripes. MATS GRANATH, Goteborg University — For a doped antiferromagnet with short-range spin stripe correlations and long-range charge stripe order the manifestation of charge order changes abruptly as a function of momentum along the Fermi surface. The disorder averaged local density of states is isotropic when integrated only over states which contribute to the “nodal” spectral weight whereas it displays long range charge stripe order when integrated only over states which contribute to the “antinodal” spectral weight. An effectively two dimensional nodal liquid can thus coexist with static charge stripes provided there is no static spin order. For commensurate spin and charge stripe ordered systems the Fermi surface consists of a nodal hole pocket and an open “stripe band” section. Due to the stripe order the relation between hole density and size of a pocket will be reduced compared to a paramagnet by a factor of two for even charge period and four for odd charge period and we find an estimated upper limit on the area fraction of a hole pocket of 1.6% for charge period four and 4% for charge period five. We also discuss why electron pockets are not expected for a stripe ordered system and show that the open Fermi surface section may be electron like with a negative Hall coefficient.

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