

Abstract Submitted
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Theory of non-fermi liquid in a diagonal electronic nematic state

HAE YOUNG KEE, University of Toronto, YING-JER KAO, National Taiwan University — We study the fluctuation effects of the diagonal electronic nematic order on a two dimensional square lattice. It has been shown that there exists a quantum critical point between the diagonal nematic and isotropic phases.[1] We study the correlations near the critical point, where the singular forward scattering leads to a non-Fermi liquid behavior over the whole Fermi surface except along the $(0,\pi)$ and $(\pi,0)$ directions. We will also discuss the decay rate of the single-particle excitations as functions of temperature and chemical potential.

[1] Hyeonjin Doh, Nir Friedman, Hae-Young Kee, Phys. Rev. B 73, 125117 (2006)

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