Abstract Submitted
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Quasi-linear temperature dependence of the resistivity due to a nested Fermi surface PEDRO SCHLOTTMANN, Florida State University — Non-Fermi liquid (NFL) behavior is often found in the neighborhood of a quantum critical point (QCP). We consider a QCP arising from the nesting of Fermi surfaces of an electron pocket and a hole pocket separated by a wavevector **Q**. The nesting gives rise to antiferromagnetism if the interaction between the carriers is repulsive. The order can gradually be suppressed by mismatching the nesting and a QCP is obtained as $T_N \to 0$. The specific heat γ coefficient and the magnetic susceptibility increase with the logarithm of the temperature as T is lowered.[1] The electrical resistivity and the linewidth of the neutron scattering quasi-elastic peak acquire a quasi-linear temperature dependence, as a consequence of the nesting of the Fermi surface.[2] This deviation from the usual Fermi liquid T^2 dependence is a manifestation of NFL behavior. The results are discussed in the context of NFL behavior observed in many heavy fermion compounds.[3]

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