Dynamic Magnetic Response of Heavy Fermion Semimetals

PE-TER RISEBOROUGH, Temple University — We have calculated the dynamical magnetic response of a model of a heavy fermion semimetal, which is characterized by a narrow gap in the f density of states and a low conduction electron density of states at the Fermi energy. The model is used to fit optical absorption measurements on CeRu$_4$Sb$_{12}$ performed by Dordevic et al., Phys. Rev. Lett. 86, 684 (2001). The temperature dependence of the dissipative part of the magnetic response is compared with the experimentally determined inelastic neutron scattering cross-section of CeRu$_4$Sb$_{12}$ measured by Adroja et al. Phys. Rev. B 68, 099426 (2003).