

# Self-consistent renormalization theory of anisotropic spin fluctuations in nearly ferromagnetic metals

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Self-consistent renormalization theory of anisotropic spin fluctuations in nearly ferromagnetic metals was constructed. Conventionally isotropic spin fluctuations in nearly ferromagnetic metals had been contemplated. The effects of anisotropic spin fluctuations in nearly ferromagnetic metals had not been deliberated. In this study, conventional self-consistent renormalization theory of spin fluctuations was extended to an anisotropic case. The temperature dependence of the inverse of the magnetic susceptibility and that of the nuclear magnetic relaxation rate were investigated. We found that the inverse of the magnetic susceptibility had  $T^2$ -linear dependence at low temperature. At the elevated temperatures, it had  $T$ -linear dependence. The temperature dependence of  $1/(T_1 T)$  has  $1/T^2$ -dependence at low temperatures where  $1/T_1$  is the nuclear magnetic relaxation rate. At the elevated temperatures, it has  $1/T$ -dependence. We found that the inverse of the magnetic susceptibility and the nuclear magnetic relaxation rate in nearly ferromagnetic metals had anisotropies.