

Abstract Submitted  
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**Magnetic Nematicity in the Hidden Ordered Compound URu<sub>2</sub>Si<sub>2</sub>** PETER RISEBOROUGH, Physics Department, Temple University, S.G. MAGALHAES, Instituto de Fisica, Universidade Federal Fluminense, E.J. CALEGARI, Instituto de Fisica, Universidade Federal Santa Maria — The Hund's rule exchange interaction promotes a second-order phase transition to a coupled spin and orbital density wave state in the underscreened Anderson Lattice Model. The spin-flip part of the Hund's rule coupling stabilizes a spontaneous spin-dependent mixing of 5f quasiparticle bands which, in the normal state, have pure orbital characters. The transition breaks the spin-rotational invariance and leads to an asymmetric pseudo-gap forming in the density of states. When a magnetic field is applied, the electronic dispersion relations become dependent on the relative orientation of the field and the spontaneously chosen quantization axis. We show that this results in the magnetic susceptibility becoming anisotropic below the critical temperature, but without the development of a static magnetization.

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