

MAR16-2015-001494

Abstract for an Invited Paper
for the MAR16 Meeting of
the American Physical Society

Magnetic moments and non-Fermi-liquid behavior in quasicrystals¹

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Motivated by the intrinsic non-Fermi-liquid behavior observed in the heavy-fermion quasicrystal Au₅₁Al₃₄Yb₁₅, we study the low-temperature behavior of dilute magnetic impurities placed in metallic quasicrystals. We find that a large fraction of the magnetic moments are not quenched down to very low temperatures, leading to a power-law distribution of Kondo temperatures, accompanied by a non-Fermi-liquid behavior, in a remarkable similarity to the Kondo-disorder scenario found in disordered heavy-fermion metals.

¹This work was supported by FAPESP (Brazil) Grant No. 2013/00681-8.