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**Kondo physics in the presence of Rashba spin-orbit interactions**
ARTURO WONG, CNyN, UNAM, Mexico, SERGIO ULLOA, NANCY SANDLER, Ohio University, KEVIN INGERSENT, University of Florida — Recent theoretical studies have shown that Rashba spin-orbit interactions in a two-dimensional electron gas (2DEG) affect the thermodynamics of the impurity Kondo effect only through changes in the host density of states [1]. These changes are generally modest [1], but yield exponential enhancement of the Kondo temperature $T_K$ [2] if the 2DEG can be tuned to a helical regime in which all electrons at the Fermi surface have the same relation between the directions of their spin and momentum. It has been proposed to access the helical regime using irradiation with circularly polarized light, giving rise to an effective Zeeman splitting of the conduction band without any direct splitting of the impurity level. We show that under this scenario, the impurity contribution to the system's net angular momentum is a universal function of the Zeeman energy divided by a temperature scale that (surprisingly at first sight) is not $T_K$, but rather is proportional to $T_K$ divided by the impurity hybridization width. This universal scaling can be understood via a perturbative treatment of irradiation-induced changes in the electron densities of states. [1] R. Zitko and J. Bonca, Phys. Rev. B 84, 193411 (2011). [2] A. Wong, S. E. Ulloa, N. Sandler, and K. Ingersent, arXiv:1509.08433.

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