

Abstract Submitted
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Interplay of magnetism and screening in the Kondo Lattice¹

PIERS COLEMAN, ANDRIY NEVIDOMSKYY, Dept Physics and Astronomy, Rutgers University — An increasing body of experimental evidence suggests that frustration and the Kondo effect have complimentary roles that act together to either reduce, or completely eliminate magnetic order in heavy electron systems[1]. I will review our attempts to explore the joint effects of frustration and Kondo effect in the Kondo Heisenberg model, using the large N Schwinger boson approach[2]. These results will be discussed in the context of recent doping experiments on YbRh₂Si₂ [3], where an intermediate spin liquid appears to develop between the antiferromagnet and the large Fermi surface metal.

[1] S. Nakatsuji, Y. Machida et al, Phys. Rev. Lett. 96, 087204 (2006).

[2] J. Rech, P. Coleman, O. Parcollet and G. Zarand, Phys. Rev. Lett. 96, 016601 (2006).

[3] T. Westerkamp, P. Gegenwart, C. Krellner et al., Physica B - Condens. Matter 403, 1236-1238 (2008).

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