

Abstract Submitted  
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**Heavy antiferromagnetic phases in Kondo lattices** ILYA VEKHTER, LEONID ISAEV, Louisiana State University — We propose a microscopic physical mechanism that stabilizes coexistence of the Kondo effect and antiferromagnetism in heavy-fermion systems. We consider a two-dimensional quantum Kondo-Heisenberg lattice model and show that long-range electron hopping leads to a robust antiferromagnetic Kondo state. By using a modified slave-boson mean-field approach we analyze the stability of the heavy antiferromagnetic phase across a range of parameters, and discuss transitions between different phases. We also address connection to experiments on heavy fermion compounds.

Leonid Isaev  
Louisiana State University

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