Abstract Submitted
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Hybridization in Kondo lattice heavy fermions via quasiparticle scattering spectroscopy (QPS)[1] SANJAY NARASIWODEYAR, MATT DWYER, LAURA GREENE, WAN KYU PARK, Univ of Illinois - Urbana, ERIC BAUER, PAUL TOBASH, RYAN BAUMBACH, FILIP RONNING, JOHN SARRAO, JOE THOMPSON, Los Alamos National Laboratory, PAUL CANFIELD, Iowa State University — Band renormalization in a Kondo lattice via hybridization of the conduction band with localized states has been a hot topic over the last several years. In part, this has to do with recently reignited interest in the hidden order problem in URu_2Si_2. Despite recent developments regarding the electronic structure in this compound, it remains to be resolved whether the hidden order phase transition is related to the opening of a hybridization gap. Our quasiparticle scattering spectroscopy (QPS) has shown they are not related directly [1]. This can be understood naturally since in principle band renormalization does not involve symmetry breaking. To deepen our understanding, we extend to other Kondo lattice compounds. For instance, when applied to $YbAl_3$, a vegetable heavy-fermion system, QPS reveals conductance signatures for hybridization in a Kondo lattice such as asymmetric Fano background along with characteristic energy scales. Presenting new results on these materials, we will discuss a broader picture.

[1] W. K. Park *et al.*, PRL **108**, 246403 (2012).

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