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Neutron scattering from the Kondo Insulator SmB6[1]

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A review of neutron scattering work probing the Kondo insulator SmB6 is presented with special emphasis on assessing the topology of the underlying strongly renormalized band structure. A 14 meV excition dominates the spectrum and is evidence of strong electron correlations [1]. Though the data generally supports the proposal that SmB6 is a topological Kondo insulator, specific heat and high-resolution neutron scattering data show a continuum of states well below the bulk transport gap, which enrich the problem and may connect to the recent surprising de Haas van Alpen results.

[1] Interaction Driven Subgap Spin Exciton in the Kondo Insulator SmB6, W.?T. Fuhrman, J. Leiner, P. Nikolic, G.?E. Granroth, M.?B. Stone, M.?D. Lumsden, L. DeBeer-Schmitt, P.?A. Alekseev, J.-M. Mignot, S.?M. Koohpayeh, P. Cottingham, W. Adam Phelan, L. Schoop, T.?M. McQueen, and C. Broholm, Phys. Rev. Lett. **114**, 036401 (2015).

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