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Kondo effect in strained layered materials[1] KEVIN INGERSENT, Univ of Florida, NANCY SANDLER, SERGIO ULLOA, Ohio Univ — The many-body Kondo screening of an impurity's magnetic moment by electrons in a host material is exquisitely sensitive to the local density of states sampled by the impurity. Such sensitivity is greatly augmented in materials with strong spin-orbit interaction, where an exponential enhancement of the characteristic Kondo temperature is possible, even in the presence of weak Zeeman fields[2]. In graphene and transition metal dichalcogenides (TMDs), strain fields produced by folds and bubbles can also strongly modify the density of states near these features and change which host degrees of freedom are affected by an impurity level. To elucidate these effects, we use renormalization-group methods to solve an Anderson model for a magnetic impurity in a strained layered material, allowing comparison between the Kondo physics in graphene and TMDs, which have very different spin-orbit interactions. The strain fields, reflecting also the underlying lattice symmetry of the host material, are found to modulate the competition between screening channels of different angular momenta and to alter the spin correlation functions associated with the Kondo state.

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[2]A. Wong et al., PRB **93**, 075148 (2016).

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