
HUNDS'S METALS

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Abstract

The proximity of a Mott insulating state (“Mottness”) is responsible for strong correlations in a number of materials, especially oxides of 3d transition metals. In this talk, I will emphasize that the Hund’s rule coupling induces strong correlation effects in materials which are not close to a Mott insulator. This is especially relevant for oxides of 4d transition metals such as ruthenates, and also for iron-based superconductors. The Hund’s rule coupling will be shown to have antagonistic effects on the Mott gap and on the quasiparticle coherence scale. It is actually remarkable that intra-atomic physics turns out to be physically relevant even in rather itinerant metals: for this reason, the self-consistent embedded-atom construction at the heart of Dynamical Mean-Field Theory proves to be especially meaningful for those materials.

References:

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