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Is FeSi a Kondo Insulator? JAN KUNES, University of Augsburg, VLADIMIR I. ANISIMOV, Institute of Metal Physics, Yekaterinburg — Using combination of a simple model of local bandstructure and quantum Monte-Carlo technique we show that 3d 'Kondo insulators' such as FeSi and $FeSb_2$ differ in many respects from classical f-electron based Kondo insulators. In particular we show that hybridization between narrow f-band and a broad conduction band typical for f-electron compounds is not a necessary condition for observation of the typical Kondo insulator behavior of susceptibily and dc as well as ac conductivity. The difference between FeSi and f-electron Kondo insulators becomes apparent when doped, while the former exhibits enhanced susceptibility leading to a Stoner-like ferromagnetic instability the latter are usually characterized by competition between the Kondo screening and local moment magnetism with RKKY inter-site coupling.

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