

Heavy Electrons and Electronic Instabilities What is (still) under the rug?

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Early investigations on heavy-electron systems indicated an intriguing but conceptually simple situation of conduction electrons in metals adopting an unusually heavy effective mass but otherwise behaving like quasiparticles of a Fermi liquid. Results of subsequent experiments suggested that the situation may not be quite so simple. In this talk, some of the identified complications will be mentioned and discussed. The impact of external perturbations, such as moderate magnetic fields and pressure, small amounts of impurities as well as aspects of phase transitions will be considered.