

凝縮系物理学ゼミナール

日時：5月19日（水）13：30～

場所：理学部5号館 413号室

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「Magnetic properties of the two-orbital Hubbard model」

We examine the orbital and magnetic order of the two-orbital Hubbard model within dynamical mean field theory. This model plays an important role when analyzing low temperature properties of, for example, transition metal oxides like manganites. In these materials, additional to strong correlations also the orbital degeneracy is a crucial ingredient.

A very interesting point in the phase diagram is quarter filling. Exactly at quarter filling we find a metal insulator transition (MIT) between two almost fully polarized ferromagnetic states. This MIT can be tuned by changing the local interaction strength and seems to be a first order transition at zero temperature. Apart from these ferromagnetic states we were able to stabilize antiferromagnetic and charge ordered phases at quarter filling, depending on the interaction parameter.