9.7 cm

CORRELATED HOPPING IN INFINITE DIMENSIONS: RIGOROUS LOCAL APPROACH

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The main idea of the Dynamical Mean Field Theory (DMFT), which is exact in the limit of infinite dimensions, is in the local (single-site) nature of the self-energy. But this statement violate for the systems with correlated hopping, when self-energy becomes unlocal [1]. In our report we present the general approach for the description of correlated hopping in infinite dimensions which is based on the expansion around the atomic limit [2,3], keeps the DMFT local ideology and allows to calculate the thermodynamical functions. As a limit cases the Falicov-Kimball model with correlated hopping and model with broken bonds ("diluted" conductor) are considered.

[1] A. Schiller, Phys. Rev. B **60**, 15660 (1999)
[2] W. Metzner, Phys. Rev. B **43**, 8549 (1991)
[3] A.M. Shvaika, Phys. Rev. B **62**, 2358 (2000)

13.4 cm

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