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【617】Nonequilibrium Two-Particle Self-Consistent Approach

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Calculating the single-particle and two-particle correlations of interacting lattice systems in a consistent and con- serving manner is a challenging task. Nonlocal correlations play an important role in low-dimensional systems and in the vicinity of phase transitions and crossovers. We establish, use and implement the non-equilibrium framework of two methods that deal self-consistently with one-particle vertex corrections within the Hubbard model, namely the Two-Particle Self-Consistent approach (TPSC) and a variation of the latter (TPSC+GG). We employ them to study spin and charge susceptibilities upon quenching the system from 3 dimensions to 2, i.e from a cubic lattice to a square lattice.

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