Calculation of Frequency Dependent Conductivity of Hubbard Model in Infinite Dimensions Using Dynamical Mean-field Theory

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We study the Hubbard model characterized by the coulomb repulsion, U. We calculate the spectral function for the Hubbard model on a Bethe lattice with infinite coordination number directly on the real-frequency aixs and investigate the phase diagram for the Mott-Hubbard metal-insulator transition. Then we fix $U(<U_{c1})$ and calculate the optical conductivity and resistivity increasing T. Our phase diagram is seemed to describe the properties of Mott transition well and we confirm that the optical conductivity has the three peaks structures and the resistivity shows a smooth crossover from the metalliclike behavior to insulatinglike behavior as T increasing.

keywords : Mott-Hubbard, optical conductivity, resistivity