

Charge Gap in One-Dimensional Extended Hubbard Model

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Abstract: By using the bosonization and renormalization group methods, we have studied the low energy physical properties in one-dimensional extended Hubbard model. The formation of charge and spin gaps is investigated at the half-filled electron band. An analytical expression for the charge gap in terms of the Coulomb repulsive interaction strength U and the nearest-neighbour interaction parameter V is obtained.

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Key words: extended Hubbard model, bosonization

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