

PS21

Analytic Calculation of One Dimensional Tunneling Current Using Nonequilibrium Green's Function

Mari Matsuo

*Department of Physics, Ochanomizu University, Otsuka 2-1-1,
Bunkyo-ku, Tokyo, 112-8610, Japan*

Using nonequilibrium green function, we study tunneling current in a one-dimensional free fermion spin less model. We calculate various green's functions, derive tunneling currents analytically, and discuss their properties. Previous studies formally calculated tunneling current in one-dimensional lattice metal - insulator - metal tight binding model by using of Keldysh formalism, solving a Dyson Equation exactly. One dimensional lattice model we treat consists of two ideal leAdS coupled to two or three site on which there is a chemical potential and which includes Pauli's principle. The leAdS have open boundary condition.