The stability of the non-equilibrium steady states

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Abstract

We consider the macroscopic stability of the non-equilibrium steady state (NESS).It is shown that the NESS of the free lattice Fermion model far from equilibrium is macroscopically unstable,when we connect a small system to it. On the other hand, the equilibrium state of the same system shows the return to equilibrium. In order to investigate the problem, we study the spectrum of Liouville Operator by use of the positive commutator method.