On the evaluation of multiplicity of ground states of quantum field models

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Abstract

In this talk, we consider abstract interaction systems of quantum fields. The state space is defined by the tensor product of a Hilbert space and Fock space. The total Hamiltonian consists of the free Hamiltonian and interaction. We suppose conditions, which include a commutation relation of interaction and annihilation operator and its regularity with respect to momentum. It is proven that if the ground state exists, then its multiplicity is finite. Its application to generalized spin-boson models are also considered.