# EFFECT OF SPECTRAL STATISTICS ON THE NUCLEAR DISSIPATION

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We investigate the effect of quantum mechanical diffusion in the space of adiabatic states of intrinsic nucleonic subsystem on the dissipative properties of macroscopic collective dynamics. By applying the cranking model approach to the nuclear macroscopic dynamics, we derive the Newtonian-like equation of motion for a single collective variable, where the dissipative character of the collective dynamics is due to both the Landau-Zener transitions and the Kubo mechanism. A diffusion equation is used to determine the time evolution of the occupation probabilities of the nuclear states. The transport characteristics are calculated for Gaussian orthogonal and unitary ensembles of the energy levels. We discuss under what conditions a time-irreversible energy exchange between the collective and nucleonic degrees of freedom is possible.