

# MASTER EQUATION FOR STATE OCCUPANCIES OF AN OPEN QUANTUM SYSTEM

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## S u m m a r y

Based on the non-equilibrium density matrix method and using the Bogolyubov's approach for the decoupling of many-particle distribution functions, a closed set of kinetic equations is derived for the state occupancies of closed and open quantum systems. It is shown that the transformation of a non-Markovian master equation into a Markovian one becomes possible at a high-frequency stochastic field alternating the energy levels of a quantum system. At a weak interaction between quantum subsystems composing the open quantum system, the set of linear balance-like kinetic equations for multistate occupancies of the system is transformed into a set of nonlinear kinetic equations for the occupancies of separate quantum subsystems.