

FROM THE QUANTUM LANGEVIN EQUATION TO THE MASTER EQUATION: A KRAUS OPERATORS DESCRIPTION

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We established a link between the quantum Langevin equation and the Master equation of an open quantum system coupled with a thermal reservoir. We determined the Kraus operators for different couplings to evaluate the change in the Master equation for different quantum Langevin equations. Our result might help for better understanding of the decoherence mechanism of a mesoscopic system and to study the dissipation dynamics of a two level system [1].

[1] C. W. Gardiner and M. J. Collett, Physical Rev. A **31**, 3761 (1985).