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Normal Ordering Solution to Quantum Dissipation and Its Induced Decoherence

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Abstract: We implement the normal ordering technique to study the quantum dissipation of a single mode harmonic oscillator system. The dynamic evolution of the system is investigated for a reasonable initial state by solving the Schrödinger equation directly through the normal ordering technique. The decoherence process of the system for the cases T=0 K and T≠0 K is investigated as an application.

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