

## Decoherence of Entangled States Calculated by a Systematic Approximate Method

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**Abstract:** In this paper the coherent-state approximation (CA) method is used to deal with the problem of the decoherence of the entangled states of two two-state systems. As the base of the discussion, the dissipation of one two-state system has been investigated at first. The improved results calculated by CA are given in the paper. It is shown that the right approaching behavior and scaling law have been obtained when CA is applied to the problem of dissipation of two two-state systems coupled with environment. The whole evolution process and calculated results of the decoherence of the entangled states show also the scaling law, right approaching behavior, and rich phenomenon.

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Key words: decoherence, coherent-state, two-state

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