

Nonzero Temperature Squeezing of the Time-Dependent Harmonic Oscillator and the Applications to the Capacitive Coupled Electric Circuit

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Abstract: A new way to calculate the nonzero temperature quantum fluctuations of the time-dependent harmonic oscillator is proposed and the properties of squeezing are exactly given. The method is applied to the capacitive coupled electric circuit. It is explicitly shown that squeezing can appear and the squeezing parameters are related to the physical quantities of the coupled circuit.

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Key words: mesoscopic electric circuit, quantum fluctuation, squeezing, thermal effect

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