

Dynamical Properties of a Single-Mode Laser with Both Colored Noise and Injected Signal

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Abstract: The colored noise in a single-mode laser with injected signal is investigated by the method of two-dimensional unified colored noise approximation. The normalized correlation function $\lambda_2(0)$, the intensity correlation time T_c and effective eigenvalue λ_{eff} are calculated. The effects of the injected signal I_0 , colored noise strength P' and the noise correlation time τ on the dynamical properties of the single-mode laser are discussed.

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Key words: unified colored noise approximation, injected signal, correlation function, intensity correlation time, effective eigenvalue

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