

Interference of Two-Component Bose-Einstein Condensates with a Coupling Drive in Presence of Dissipation

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Abstract: The interference of the two-component Bose-Einstein condensates with a coupling drive in the presence of the dissipation is studied. We find that when the two-component Bose-Einstein condensates are initially in the coherent states, for the smaller dissipation parameters compared with that of the rf frequency ω_{rf} , the interference intensity exhibits damped oscillation behavior, whereas when the dissipation parameters are larger than that of the ω_{rf} , the interference intensity exhibits a fast attenuation behavior. As a comparison, the interference intensity in the absence of the dissipation is also studied. We conclude that the dissipation of the system can be evaluated by selecting the ω_{rf} experimentally.

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Key words: interference, dissipation, two-component Bose-Einstein condensates

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