

Preference of Chaotic Synchronization in a Coupled Laser System

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Abstract: In a coupled laser system, the dynamics of the receiving laser is investigated when two separate transmitting lasers are injected into the receiving laser with different coupling strengths. It is shown that the phenomenon of preference of chaotic synchronization appears under appropriate coupling conditions. The receiving laser will entrain the pulses of either one or both transmitting lasers when the coupling is strong while it keeps its own dynamics when the coupling is weak.

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Key words: coupled laser system, dynamics, preference of chaotic synchronization

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