

Phase-Locking Dynamics in Coupled Circle-Map Lattices

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Abstract: The phase-locking dynamics in 1D and 2D lattices of non-identical coupled circle maps is explored. A global phase locking can be attained via a cascade of clustering processes with the increase of the coupling strength. Collective spatiotemporal dynamics is observed when a global phase locking is reached. Crisis-induced desynchronization is found, and its consequent spatiotemporal chaos is studied.

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Key words: phase locking, circle map, crisis

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