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Diffusive synchronization of hyperchaotic Lorenz systems. (English) Zbl 1182.37024
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Summary: The synchronizing properties of two diffusively coupled hyperchaotic Lorenz 4D systems are investigated by calculating the transverse Lyapunov exponents and by observing the phase space trajectories near the synchronization hyperplane. The effect of parameter mismatch is also observed. A simple electrical circuit described by the Lorenz 4D equations is proposed. Some results from laboratory experiments with two coupled circuits are presented.

MSC:

- 37D45** Strange attractors, chaotic dynamics of systems with hyperbolic behavior
34C28 Complex behavior and chaotic systems of ordinary differential equations

Cited in 1 Document

Keywords:

Lorenz system; synchronization; Lyapunov exponents; electrical circuit

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