

Coca, D.; Billings, S. A.

Identification of coupled map lattice models of complex spatio-temporal patterns. (English)

Zbl 0971.37022

Phys. Lett., A 287, No. 1-2, 65-73 (2001).

Summary: A method for the identification of nonlinear coupled map lattices equations from measured spatio-temporal data is introduced. The application of the algorithm is demonstrated using chaotic two-dimensional spatio-temporal patterns generated from interacting populations and the resulting models are validated by computing the attractors and the largest Lyapunov exponents.

MSC:

37H15 Random dynamical systems aspects of multiplicative ergodic theory, Lyapunov exponents Cited in **15** Documents

Keywords:

interacting populations; attractors; largest Lyapunov exponents

Full Text: [DOI](#)

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