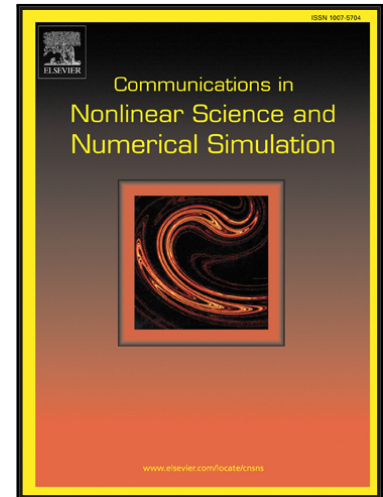


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Numerical Characterization of Nonlinear Dynamical Systems Using
Parallel Computing: The Role of GPUs Approach

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Highlights

- Characterization of nonlinear dynamical systems using MATLAB, GPUs, CUDA and ANSI C.
- We show a framework to use parallel tools for Lyapunov exponent calculation in MATLAB.
- The use of CUDA for the identification of Lagrangian Coherent Structures is discussed.
- It is proposed a methodology based on CUDA for the construction of the parameter space.
- We obtained speedups of two orders considering MATLAB, ANSI C and CUDA approaches.

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