Hirsch, Morris W.

Stability and convergence in strongly monotone dynamical systems. (English) Zbl 0624.58017

J. Reine Angew. Math. 383, 1-53 (1988).

Some dynamical systems enjoy a strong comparison principle; these include quasilinear second-order parabolic equations and cooperative vector fields. Under fairly general conditions it is shown that such systems are nonchaotic: most orbits with compact closure are asymptotic to the set of stationary points, and most orbits are Lyapunov stable. Applications are made to various classes of ordinary and partial differential equations.

MSC:

37C75 Stability theory for smooth dynamical systems

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quasilinear second-order parabolic equations; orbits; stationary points; Lyapunov stable

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