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The asymptotic average shadowing property and strong ergodicity. (English) Zbl 1339.37003
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Summary: Let X be a compact metric space and $f : X \to X$ be a continuous map. In this paper, we prove that if f has the asymptotic average shadowing property (Abbrev. AASP) and an invariant Borel probability measure with full support or the positive upper Banach density recurrent points of f are dense in X, then for all $n \geqslant 1, f \times f \times \cdots \times f$ (n times) and f^n are totally strongly ergodic. Moreover, we also give some sufficient conditions for an interval map having the AASP to be Li-Yorke chaotic.

MSC:

37A25 Ergodicity, mixing, rates of mixing
37C50 Approximate trajectories (pseudotrajectories, shadowing, etc.) in smooth dynamics
37D45 Strange attractors, chaotic dynamics of systems with hyperbolic behavior

Full Text: DOI

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