Pliss, Viktor Aleksandrovich

On the hyperbolicity of smooth cocycles over flows with invariant ergodic measure. (Russian. English summary) Zbl 0604.58040

Čas. Pěstování Mat. 111, 146-155 (1986).

The author shows that if $\Phi(p,t)$ is a smooth h-dimensional cocycle with Lyapunov exponents $\lambda_i \neq 0$, $i = 1, ..., n$ such that exactly k among them are negative then for any $\epsilon > 0$ there is a number $\alpha > 0$ and a measurable subset M_ϵ with measure $> 1 - \epsilon$ such that for any $p \in M$ there exists a k-dimensional linear subspace $L^+(p)$ satisfying $|\Phi(p,t)z| \leq a|z|e^{-\alpha t}$ for any $z \in L^+(p)$ and $t \geq 0$, where $\lambda = 1/2 \min_i |\lambda_i|$, and $|\Phi(p,t)z| \leq \alpha|z|e^{\lambda t}$ for any $t \leq 0$ and z from the complementary $(n-k)$-dimensional linear subspace $L^-(p)$.

Reviewer: Yu.Kifer

MSC:

37D99 Dynamical systems with hyperbolic behavior
34D15 Singular perturbations of ordinary differential equations
37A99 Ergodic theory

Keywords:

cocycle; Lyapunov exponents

Full Text: EuDML