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Smale’s spectral decomposition theorem

Canonical name	SmalesSpectralDecompositionTheorem
Date of creation	2013-03-22 14:28:08
Last modified on	2013-03-22 14:28:08
Owner	Koro (127)
Last modified by	Koro (127)
Numerical id	4
Author	Koro (127)
Entry type	Theorem
Classification	msc 37D20
Synonym	spectral decomposition theorem
Defines	basic block

Let M be a compact differentiable manifold and let $f: M \rightarrow M$ be an Axiom A diffeomorphism. The nonwandering set Ω of f can be partitioned into a finite number of compact topologically transitive blocks, called basic blocks:

$$\Omega = \bigcup_{i=1}^m \Lambda_i.$$

Moreover, each basic block is partitioned into a finite number of compact subblocks Λ_{ij} , $j = 1, \dots, m_i$ such that $f(\Lambda_{ij}) = \Lambda_{i(j+1)}$ for $1 \leq j < m_i$ and $f(\Lambda_{im_i}) = \Lambda_{i1}$, and Λ_{ij} is topologically mixing for f^{m_i} .