ROCKY MOUNTAIN
JOURNAL OF MATHEMATICS
Volume 22, Number 2, Spring 1992

A CLASS OF CONTINUA WHICH ADMITS NO EXPANSIVE HOMEOMORPHISMS

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ABSTRACT. It is proved that any Suslinian, hereditary θ-continuum admits no expansive homeomorphisms.

1. Introduction. A compact, connected metric space is called a *continuum*. A homeomorphism $f : X \twoheadrightarrow X$ of a continuum X is called *expansive* if there exists a constant $c > 0$ (called the *expansive constant*) which satisfies the following condition. For each pair of distinct points x, y of X, there exists an integer n such that $d(f^n(x), f^n(y)) > c$, where d is a metric of X. Expansiveness does not depend on the choice of metrics of X. It is an interesting problem whether a given continuum has an expansive homeomorphism of itself.

To consider this problem, the first author suggested the idea of using monotone decompositions of continua in [**7**]. Using this idea, we show that any Suslinian, hereditary θ-continuum admits no expansive homeomorphisms.

Definition 1. Let X be a continuum. 1) X is called a *θ-continuum* (a *θ_n-continuum*, respectively) if for each subcontinuum Y of X, the number of components of $X - Y$ is finite (at most n, respectively). If each subcontinuum of X is a θ-continuum (θ_n-continuum, respectively), X is called a *hereditary θ-continuum* (a *hereditary θ_n-continuum*, respectively).

2) X is called *Suslinian* if it has no uncountable collection of mutually disjoint nondegenerate subcontinua of X.

3) X is called *decomposable* if $X = A \cup B$ for some proper subcontinua A and B of X. If each subcontinuum of X is decomposable, X is called *hereditarily decomposable.*

It is easy to see that Suslinian continua are hereditarily decomposable.

Received by the editors on March 2, 1989, and in revised form on July 17, 1989.
AMS (MOS) *Subject Classification.* Primary 54F50, Secondary 54F20, 58F15.
Key words and phrases. Expansive homeomorphism, hereditary θ-continuum, Suslinian.