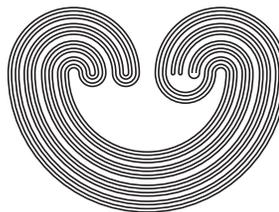


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PLANAR EMBEDDINGS OF CHAINABLE CONTINUA

by

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PLANAR EMBEDDINGS OF CHAINABLE CONTINUA

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ABSTRACT. We prove that for a chainable continuum $X = \varprojlim([0, 1], f_i)$ where every $x \in X$ has only finitely many coordinate projections contained in a zigzag, there exists a planar embedding $\varphi : X \rightarrow \varphi(X) \subset \mathbb{R}^2$ such that $\varphi(x)$ is accessible. This partially answers a question of Sam B. Nadler, Jr. and J. Quinn [Embeddability and Structure Properties of Real Curves. Memoirs of the American Mathematical Society, No. 125. Providence, R.I.: American Mathematical Society, 1972]. Two embeddings $\varphi, \psi : X \rightarrow \mathbb{R}^2$ are called strongly equivalent if $\varphi \circ \psi^{-1} : \psi(X) \rightarrow \varphi(X)$ can be extended to a homeomorphism of \mathbb{R}^2 . We prove that every nondegenerate indecomposable chainable continuum can be embedded in the plane in uncountably many ways that are not strongly equivalent.

1. INTRODUCTION

It is well known that every chainable continuum can be embedded in the plane; see [6]. In this paper, we develop methods to study nonequivalent planar embeddings, similar to methods used by Wayne Lewis in [14] and Michel Smith in [28] for the study of planar embeddings of the pseudo-arc. Following R. H. Bing's approach from [6] (see Lemma 3.1), we

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