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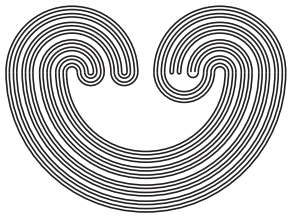

$\frac{1}{2}$-HOMOGENEOUS HYPERSPACES

by

Sergio Macías and Sam B. Nadler, Jr.

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$\frac{1}{2}$-HOMOGENEOUS HYPERSPACES

SERGIO MACÍAS AND SAM B. NADLER, JR.

Abstract. Sam B. Nadler, Jr. and Patricia Pellicer-Covarrubias studied the $\frac{1}{2}$-homogeneity of the hyperspace of subcontinua of a continuum X. We continue this investigation and include results about the $\frac{1}{2}$-homogeneity of the hyperspace suspension of X.

1. Introduction

An investigation of $\frac{1}{2}$-homogeneity of the hyperspace of subcontinua, $\mathcal{C}(X)$, of a continuum X is initiated in [23]. We continue with this investigation and we include results on the $\frac{1}{2}$-homogeneity of the hyperspace suspension, $HS(X)$, of X, which is introduced in [21].

In this paper we investigate the $\frac{1}{2}$-homogeneity of the hyperspace of subcontinua, $\mathcal{C}(X)$, of a continuum X and present some general results we use later to provide partial answers to [23, Question, p. 142] (Theorems 3.9, 3.11, and 3.12). We study the $\frac{1}{2}$-homogeneity of $\mathcal{C}(X)$ when X is an indecomposable continuum in section 4. In section 5 we prove that a continuum X is a simple closed curve when X is homogeneous and $\mathcal{C}(X)$ is $\frac{1}{2}$-homogeneous (Theorem 5.3). We investigate the $\frac{1}{2}$-homogeneity of the hyperspace suspension, $HS(X)$, of the continuum X in section 6.

The present work started in the first half of 2008, while the first named author spent a sabbatical year at the University of Toledo, Ohio (2007-2008). After I left Toledo, we worked on the paper via e-mail. After some

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Key words and phrases. $\frac{1}{2}$-homogeneity, aposyndesis, continuum, decomposable continuum, first category, indecomposable continuum, homogeneity, hyperspace, hyperspace suspension, property of Kelley, property of Kelley weakly.

Unfortunately, Professor Nadler passed away on February 4, 2016.

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