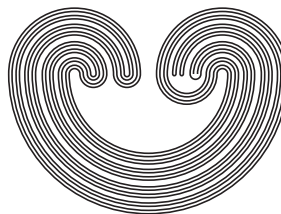


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THE PROPERTY OF SEMI-KELLEY FOR HAUSDORFF CONTINUA

by

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THE PROPERTY OF SEMI-KELLEY FOR HAUSDORFF CONTINUA

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ABSTRACT. In this paper we introduce the property of semi-Kelley for Hausdorff continua. We use this notion to characterize Hausdorff continua with the property of Kelley. We prove that if a product of Hausdorff continua has the property of semi-Kelley, then each factor continuum has the property of Kelley. Concerning hyperspaces, we prove that if either $C(X)$, $C_n(X)$, or 2^X has the property of semi-Kelley, then X has the property of Kelley.

1. INTRODUCTION

The property of Kelley is introduced by J. L. Kelley [12, p. 26, property 3.2] to study contractibility of hyperspaces of metric continua. In 1998, Janusz J. Charatonik and Włodzimierz J. Charatonik [3, Definition 3.16], introduce the property of semi-Kelley for metric continua; in this paper, they prove that the property of semi-Kelley is a weaker property than the property of Kelley and generalize several results known for metric continua with the property of Kelley to metric continua with the property of semi-Kelley.

In 1999, W. J. Charatonik [7, Definition 2.1] and Władysław Makuchowski [16, p. 124] extend, independently, the property of Kelley for Hausdorff continua; in particular, Charatonik shows an example of a homogeneous continuum that does not have the property of Kelley, and Makuchowski uses the property of Kelley to show that several definitions of local connectivity are equivalent in the hyperspace $C(X)$ of a continuum X with the property of Kelley. In 2006, J. J. Charatonik and Alejandro

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Key words and phrases. confluent mapping, continuum, hyperspace, property of Kelley, property of semi-Kelley, retraction, semi-confluent mapping.

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