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# TOPOLOGY PROCEEDINGS



Volume 46, 2015

Pages 29–32

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<http://topology.nipissingu.ca/tp/>

## UNICOHERENCE OF THE $n^{\text{th}}$ -FOLD SYMMETRIC PRODUCT SUSPENSION OF A CONTINUUM

by

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Electronically published on April 1, 2014

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**ISSN:** 0146-4124

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## UNICOHERENCE OF THE $n^{\text{th}}$ -FOLD SYMMETRIC PRODUCT SUSPENSION OF A CONTINUUM

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**ABSTRACT.** For a metric continuum  $X$ , let  $F_n(X)$  be the hyperspace of all nonempty subsets of  $X$  with at most  $n$  elements and let  $SF_1^n(X)$  be the continuum  $F_n(X)/F_1(X)$ , that is,  $SF_1^n(X)$  is the quotient space obtained by identifying the set  $F_1(X)$  to a point in  $F_n(X)$ . In this paper we show that for every continuum  $X$ ,  $SF_1^2(X)$  is unicoherent. This answers a question by Enrique Castañeda-Alvarado and Javier Sánchez-Martínez.

### 1. INTRODUCTION

A *continuum* is a compact connected metric space, with more than one point. Given a metric continuum  $X$ , we consider the  $n^{\text{th}}$ -symmetric product  $F_n(X)$  defined as

$$F_n(X) = \{A \subset X : A \text{ is nonempty and } A \text{ contains at most } n \text{ points}\}.$$

This space is considered with the Hausdorff metric.

Given  $0 < m < n$ , we consider the quotient space

$$SF_m^n(X) = F_n(X)/F_m(X),$$

which is obtained by shrinking to a point the subset  $F_m(X)$  of  $F_n(X)$ .

Spaces of the form  $F_1^n(X)$  are called  $n^{\text{th}}$ -fold symmetric product suspension of a continuum.

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2010 *Mathematics Subject Classification.* Primary 54B20, Secondary, 54F55, 54F15.

*Key words and phrases.* continuum, hyperspace, symmetric product, unicoherence.

This paper was partially supported by the project “Hiperespacios topológicos (0128584)” of Consejo Nacional de Ciencia y Tecnología (CONACYT), 2009, the project “Teoría de Continuos, Hiperespacios y Sistemas Dinámicos” (IN104613) of PAPIIT, DGAPA, UNAM, and Consejo Mexiquense de Ciencia y Tecnología (COMECYT) by agreement to implement the “Séptimo Taller de Investigación en Continuos e Hiperespacios.”

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