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

TOPOLOGY PROCEEDINGS

Volume 66, 2025

Pages 149–163

Non-cut vietoric sets in n-fold hyperspaces of continua

by

Florencio Corona–Vázquez, José A. Martínez–Cortez, Russell-Aarón Quiñones–Estrella, and Javier Sánchez–Martínez

Electronically published on July 18, 2025

Topology Proceedings

Web:	http://topology.nipissingu.ca/tp/
Mail:	Topology Proceedings Department of Mathematics & Statistics Auburn University, Alabama 36849, USA
E-mail:	topolog@auburn.edu
ISSN:	(Online) 2331-1290, (Print) 0146-4124

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

TOPOLOGY PROCEEDINGS
Volume 66 (2025)
Pages 149-163

E-Published on July 18, 2025

NON-CUT VIETORIC SETS IN n-FOLD HYPERSPACES OF CONTINUA

FLORENCIO CORONA–VÁZQUEZ, JOSÉ A. MARTÍNEZ–CORTEZ,
RUSSELL-AARÓN QUIÑONES–ESTRELLA,
AND JAVIER SÁNCHEZ–MARTÍNEZ

Abstract. Let X be a continuum and n be a positive integer. The symbol $C_n(X)$ denotes the hyperspace of all nonempty, closed subsets of X having at most n components, $C_n(X)$ is endowed with the Vietoris topology. Given a finite family $\{C_1, \ldots, C_r\}$ of connected subsets of X, $r \leq n$, it is well known that the set $\langle C_1, \ldots, C_r \rangle_n$ of all elements A in $C_n(X)$ such that $A \subset \bigcup_{i=1}^{r} C_i$ and $A \cap C_i \neq \emptyset$ for each i, is a connected subset of $C_n(X)$, consequently, if $B_1, \cdots, B_r \subset X$ are such that $X - B_i$ is a connected subset for each $i \in \{1, \ldots, r\}$, then $C_n(X) - \langle X - B_1, \ldots, X - B_r \rangle_n$ has a connected complement in $C_n(X)$. In this paper we will study the analogous property by changing non-cut sets for some of the following types of sets: non-weak cut sets, sets that do not block the singletons of X, sets that do not block some point of X, and shore sets.

1. Introduction

A *continuum* is a nondegenerate, compact, connected metric space. Given a continuum X, a *subcontinuum* of X is a subspace that is nonempty, closed, and connected. A continuum X is said to be a *dendrite* provided that it is locally connected without simple closed curves; X is

2020 *Mathematics Subject Classification.* Primary 54B20; Secondary 54B05.

Key words and phrases. Continua, non-cut set, hyperspace, Vietoris topology.

The second author thanks SECIHTI (previously named CONAHCyT) for the support given by *Programa de Estancias Posdoctorales por México para la Formación y Consolidación de las y los Investigadores por México.*