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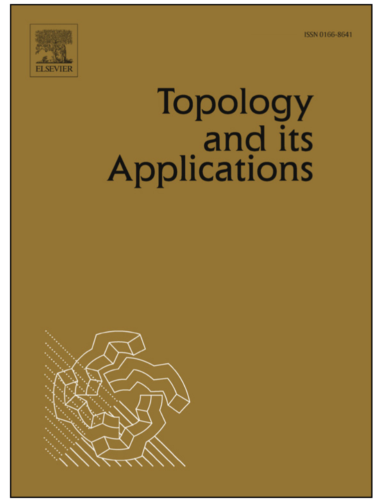

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Mojtaba Mohareri, Behrooz Mashayekhy, Hanieh Mirebrahimi

PII: S0166-8641(18)30490-5
DOI: https://doi.org/10.1016/j.topol.2018.06.012
Reference: TOPOL 6494

To appear in: *Topology and its Applications*

Received date: 2 November 2016
Revised date: 23 June 2018
Accepted date: 25 June 2018

Please cite this article in press as: M. Mohareri et al., The Capacity of Wedge Sum of Spheres of Different Dimensions, *Topol. Appl.* (2018), https://doi.org/10.1016/j.topol.2018.06.012

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The Capacity of Wedge Sum of Spheres of Different Dimensions

Mojtaba Mohareri, Behrooz Mashayekhy*, Hanieh Mirebrahimi

Department of Pure Mathematics, Center of Excellence in Analysis on Algebraic Structures, Ferdowsi University of Mashhad, P.O.Box 1159-91775, Mashhad, Iran.

Abstract

K. Borsuk in 1979, in the Topological Conference in Moscow, introduced the concept of the capacity of a compactum. In this paper, we compute the capacity of wedge sum of finitely many spheres of various dimensions.

Keywords: Homotopy domination, Homotopy type, Wedge sum of spheres, Polyhedron, CW-complex, Compactum.
2010 MSC: 55P15, 55P55, 54E30.

1. Introduction and Motivation

Throughout this paper, every polyhedron and each CW-complex is assumed to be finite and connected. Also, by a map between two CW-complexes we mean a cellular one.

K. Borsuk in [2] introduced the concept of the capacity $C(A)$ of a compactum A as the cardinality of the class of the shapes of all compacta X such that $Sh(X) \leqslant Sh(A)$ (for more details, see [13]).

For polyhedra, the notions shape and shape domination in the above definition can be replaced by the notions homotopy type and homotopy domination, respectively. Indeed, by some known results in shape theory one can conclude that for any polyhedron P, there is a one to one functorial correspondence between the shapes of compacta shape dominated by P and the homotopy types of CW-complexes (not necessarily finite) homotopy dominated by P. Consequently, for a finite polyhedron

*Corresponding author
Email addresses: m.mohareri@stu.um.ac.ir (Mojtaba Mohareri), bmashf@um.ac.ir (Behrooz Mashayekhy), h_mirebrahimi@um.ac.ir (Hanieh Mirebrahimi)

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