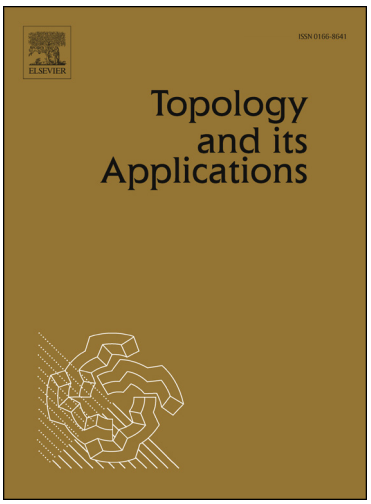
Accepted Manuscript



Cardinal invariants and universality

D.N. Georgiou, A.C. Megaritis

PII: S0166-8641(17)30052-4
DOI: http://dx.doi.org/10.1016/j.topol.2017.02.009
Reference: TOPOL 6017

To appear in: *Topology and its Applications*

Received date: 15 November 2015
Revised date: 30 July 2016
Accepted date: 24 August 2016

Please cite this article in press as: D.N. Georgiou, A.C. Megaritis, Cardinal invariants and universality, *Topol. Appl.* (2017), http://dx.doi.org/10.1016/j.topol.2017.02.009

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Cardinal invariants and universality

D. N. Georgiou[a], A. C. Megaritis[b]

[a] *University of Patras, Department of Mathematics, 265 00 Patras, Greece*

[b] *Technological Educational Institute of Western Greece, Department of Accounting and Finance, 302 00 Messolonghi, Greece*

Abstract

We define and investigate some new cardinal invariants using sums of spaces belonging to a fixed class of spaces. Our approach includes known invariants as special cases, such as the cardinality of a topological space, the number of connected components of a topological space, and the metrizability number, first countability number, discrete metrizability number. Also, we study the problem of universality for some classes of spaces which are defined by the new cardinal invariants. In fact we prove that these classes are saturated. The notion of saturated class of spaces is given by S.D. Iliadis in [7]. In the saturated classes there are universal elements. However, the saturated classes of spaces have "something more" than the existence of universal elements. For example, the intersection of saturated classes is also a saturated class while the intersection of classes of spaces having universal elements does not have in general such elements.

Key words: Cardinal invariant, Saturated class, Universal space.
1991 MSC: 54A25, 54F45, 54C25

1 Introduction and preliminaries

One of the main questions considered in the papers [2] and [3] (see also [15]) is the following one: how complex can a space be if it is the union of two (of a finite family, of a countable family) nice subspaces? Another interesting problem is the study of Sum Theorems for various classes of topological spaces. The best known Sum Theorem is the following:

Email addresses: georgiou@math.upatras.gr (D. N. Georgiou[a]), thanasismeg13@gmail.com (A. C. Megaritis[b]).

Download English Version:

https://daneshyari.com/en/article/5777836

Download Persian Version:

https://daneshyari.com/article/5777836

Daneshyari.com