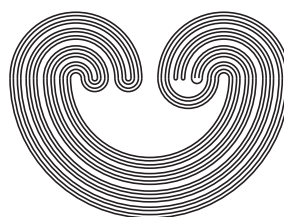


<http://topology.auburn.edu/tp/>

TOPOLOGY PROCEEDINGS



Volume 47, 2016

Pages 81–88

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

OK-EXTENDIBLE FILTERS ON ω

by

ANDRÉS MILLÁN

Electronically published on April 14, 2015

This file contains only the first page of the paper. The full version of the paper is available to Topology Proceedings subscribers. See <http://topology.auburn.edu/tp/subscriptioninfo.html> for information.

Topology Proceedings

Web: <http://topology.auburn.edu/tp/>

Mail: Topology Proceedings
Department of Mathematics & Statistics
Auburn University, Alabama 36849, USA

E-mail: topolog@auburn.edu

ISSN: 0146-4124

COPYRIGHT © by Topology Proceedings. All rights reserved.



OK-EXTENDIBLE FILTERS ON ω

ANDRÉS MILLÁN

ABSTRACT. In this note we prove that every meager filter can be extended to an OK-point and that there are 2^c -many nonmeager and null filters having OK-point extensions as well. These results generalize a construction by K. Kunen. Also, we notice that is consistent with ZFC that some measure zero filters cannot have OK-point extensions. Finally, we prove that despite of the fact that there exist 2^c -many OK-points, its generic existence is independent of the axioms of ZFC.

1. INTRODUCTION

OK point ultrafilters were introduced by K. Kunen in [4] in order to prove that the remainder of the Stone-Čech compactification of ω is not homogeneous. Kunen constructed OK-points by using a system of infinite sets of ω with strong combinatorial properties. However, it was not clear for which kind of filters other than the cofinite filter that a similar construction could be performed. Also, it was shown in [4] that in ZFC, OK points are relatively abundant in the sense that there are 2^c -many of them but, it was not obvious whether “small” filters could be extended to OK-points. The lack of interest about these issues could be attributed to the fact that papers [1], [2] and [6] had not yet been published and possibly those questions were not relevant at that time. This note can be considered as a first attempt to answer them.

Our notation and terminology is fairly standard. The cofinite filter will be denoted $\mathcal{F}_{\text{cof}} = \{A \subseteq \omega : |\omega \setminus A| < \omega\}$. Letters \mathcal{F} , \mathcal{G} and \mathcal{H} will always denote a filter containing \mathcal{F}_{cof} . Letters \mathcal{U} and \mathcal{V} will denote

2010 *Mathematics Subject Classification.* Primary 03E05, 03E65, 04A20; Secondary 54A25.

Key words and phrases. OK-point, OK-extendible filter, OK-friendly filter.

Thanks to profesores K. Kunen and J. Roitman for sending me copies of their papers.

©2015 Topology Proceedings.

This file contains only the first page of the paper. The full version of the paper is available to Topology Proceedings subscribers. See <http://topology.auburn.edu/tp/subscriptioninfo.html> for information.