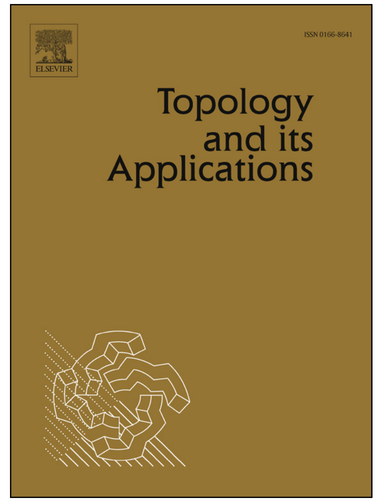
Accepted Manuscript



A theorem on remainders of topological groups

A.V. Arhangel'skii, J. van Mill

PII: S0166-8641(17)30045-7
DOI: http://dx.doi.org/10.1016/j.topol.2017.02.003
Reference: TOPOL 6011

To appear in: *Topology and its Applications*

Received date: 20 October 2015
Revised date: 10 September 2016
Accepted date: 26 September 2016

Please cite this article in press as: A.V. Arhangel'skii, J. van Mill, A theorem on remainders of topological groups, *Topol. Appl.* (2017), http://dx.doi.org/10.1016/j.topol.2017.02.003

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

A Theorem on Remainders of Topological Groups

A. V. Arhangel'skii and J. van Mill
MGU and MPGU, Moscow, Russian Federation
University of Amsterdam, Amsterdam, the Netherlands

February 7, 2017

Abstract

It has been established in [7], [8], and [9] that a non-locally compact topological group G with a first-countable remainder can fail to be metrizable. On the other hand, it was shown in [6] that if some remainder of a topological group G is perfect, then this remainder is first-countable. We improve considerably this result below: it is proved that in the main case, when G is not locally compact, the space G is separable and metrizable. Some corollaries of this theorem are given, and an example is presented showing that the theorem is sharp.

Keywords: Remainder, compactification, topological group, first-countable, perfect space, metrizable, spread, pseudocompact, free sequence

2000 Mathematics Subject Classification: Primary: 54A25; 54H11; Secondary: 54B05

1 Preliminaries

By 'a space' we understand a Tychonoff topological space. By a *remainder* of a space X we mean the subspace $bX \setminus X$ of a Hausdorff compactification bX of X. We follow the terminology and notation in [11]. In particular, a space X has *countable type* if every compact subspace S of X is contained in a compact subspace T of X which has a countable base of open neighbourhoods

ACCEPTED MANUSCRIPT

Download English Version:

https://daneshyari.com/en/article/5777839

Download Persian Version:

https://daneshyari.com/article/5777839

Daneshyari.com