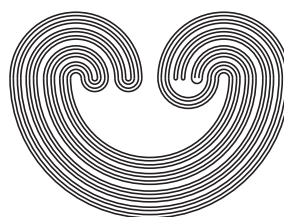


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IRREDUCIBILITY ON MONOTONICALLY NORMAL SPACES AND GO-SPACES

by

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IRREDUCIBILITY ON MONOTONICALLY NORMAL SPACES AND GO-SPACES

YASUSHI HIRATA AND YUKINOBU YAJIMA

ABSTRACT. We first present a characterization for the irreducibility of monotonically normal spaces. Making use of it, we proceed another characterization for the irreducibility of GO-spaces. Next, we discuss when GO-spaces have an irreducible subspace which is not D . As a result, we give a characterization for GO-spaces which have a closed irreducible subspace being not D .

1. INTRODUCTION

The study of D -spaces has been advanced by many mathematicians since around 2000. The concept was first introduced by van Douwen in [8]. However, a substantial start seems to be the theorem of van Douwen and Lutzer [7] in 1997. Combining a classical result of Engelking and Lutzer [9], it is stated as follows.

Theorem 1.1. *For a GO-space X , the following are equivalent.*

- (a) X is paracompact.
- (b) X is weakly submetalindelöf.
- (c) There is no closed subspace in X homeomorphic to a stationary subset in a regular uncountable cardinal.
- (d) X is a D -space.

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Key words and phrases. Irreducible, monotonically normal, GO-space, D -space, extent, Lindelöf degree.

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