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TOPOLOGY PROCEEDINGS

Volume 66, 2025

Pages 185–200

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Electronically published on August 10, 2025

Topology Proceedings

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E-mail:	topolog@auburn.edu
ISSN:	(Online) 2331-1290, (Print) 0146-4124

http://topology.nipissingu.ca/tp/
TOPOLOGY PROCEEDINGS
Volume 66 (2025)
Pages 185-200
E-Published on August 10, 2025

LOCALIZATION OF ANTISYMMETRIC SPACES IN THE FRAMEWORK OF QUASI-METRICS

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Abstract. Antisymmetric T_0-quasi-metric spaces which are in some sense opposite to metric spaces had appeared in the previous studies rather naturally, within the framework of asymmetry of the T_0-quasi-metric spaces.

In this paper, the locality status of antisymmetric T_0-quasi-metrics is described and studied under the name local antisymmetricness. Following that we examine the cases under which conditions a non-metric T_0-quasi-metric space would become locally antisymmetric as well as all finite T_0-quasi-metric spaces are locally antisymmetric. Moreover, some asymmetric properties of locally antisymmetric T_0-quasi-metric spaces are determined via topological perspectives and metrics. As another approach in the context of asymmetric topology, some different aspects of the local antisymmetricness are discussed especially for the T_0-quasi-metrics generated by the asymmetric norms.

1. Introduction

In [12], the notion of antisymmetric T_0-quasi-metric space which is in some sense opposite to metric space had appeared rather naturally, within the framework of asymmetry of the T_0-quasi-metric spaces. Some crucial asymmetric properties and the topological aspects of antisymmetric T_0-quasi-metric spaces had been investigated in [5], by presenting many results and (counter) examples.

2020 *Mathematics Subject Classification.* 54D05; 05C10; 54E35; 05C38.

Key words and phrases. T_0-quasi-metric; symmetric path; connected graph; asymmetric norm; local antisymmetric connectedness.