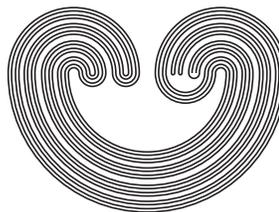


<http://topology.auburn.edu/tp/>

---

# TOPOLOGY PROCEEDINGS



Volume 54, 2019

Pages 177–191

---

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

## SPACES WITH $sn$ -NETWORK $g$ -FUNCTIONS

by

TRAN VAN AN AND LUONG QUOC TUYEN

Electronically published on February 16, 2019

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](mailto:topolog@auburn.edu)

**ISSN:** (Online) 2331-1290, (Print) 0146-4124

COPYRIGHT © by Topology Proceedings. All rights reserved.



## SPACES WITH *sn*-NETWORK *g*-FUNCTIONS

TRAN VAN AN AND LUONG QUOC TUYEN

**ABSTRACT.** In this paper, we introduce the concepts of an *sn*-network *g*-function, an *sn*-developable space, and a strongly *sn*-developable space as generalizations of a “weak base *g*-function,” a “*g*-developable space,” and a “strongly *g*-developable space,” respectively. Then we give some characterizations of *sn*-symmetric spaces, Cauchy *sn*-symmetric spaces, *sn*-metrizable spaces, and Cauchy *sn*-symmetric spaces with  $\sigma$ -(*P*)-property *sn*-networks.

### 1. INTRODUCTION

In [11], Kyung Bai Lee introduced CWC-maps and *g*-developable spaces and gave some characterizations of *g*-developable spaces. Later, Zhi Min Gao [4] introduced the notion of weak base *g*-functions by means of weak bases to study the metrizability of a topological space. In 2006, Y. Tanaka and Y. Ge [18] introduced strongly *g*-developable spaces and gave some characterizations of *g*-developable spaces.

In this paper, we introduce the concepts of an *sn*-network *g*-function, an *sn*-developable space, and a strongly *sn*-developable space as generalizations of a “weak base *g*-function,” a “*g*-developable space,” and a “strongly *g*-developable space,” respectively. Then we give some characterizations of *sn*-symmetric spaces, Cauchy *sn*-symmetric spaces, *sn*-metrizable spaces, and Cauchy *sn*-symmetric spaces with  $\sigma$ -(*P*)-property *sn*-networks.

Throughout this paper, all spaces are assumed to be  $T_1$  and regular and  $\mathbb{N}$  denotes the set of all natural numbers. Given two families  $\mathcal{P}$  and

---

2010 *Mathematics Subject Classification.* Primary 54C10, 54D55, 54E40; Secondary 54E99.

*Key words and phrases.* Cauchy *sn*-symmetric, *sn*-developable, *sn*-metrizable, *sn*-network *g*-functions, strongly *sn*-developable.

©2019 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.