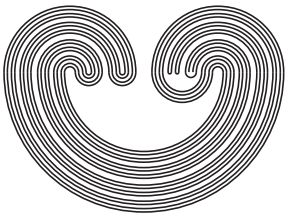
http://topology.nipissingu.ca/tp/

TOPOLOGY PROCEEDINGS

Volume 67, 2026

Pages 51–71



Variations of topologies induced by mixing topologies

by

Yasunao Hattori

Electronically published on June 30, 2025

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.nipissingu.ca/tp/subscriptioninfo.html for information.

Topology Proceedings

Web:	http://topology.nipissingu.ca/tp/
Mail:	Topology Proceedings Department of Mathematics & Statistics Auburn University, Alabama 36849, USA
E-mail:	topolog@auburn.edu
ISSN:	(Online) 2331-1290, (Print) 0146-4124

COPYRIGHT © by Topology Proceedings. All rights reserved.

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

TOPOLOGY PROCEEDINGS
Volume 67 (2026)
Pages 51-71

E-Published on June 30, 2025

VARIATIONS OF TOPOLOGIES INDUCED BY MIXING TOPOLOGIES

YASUNAO HATTORI

Dedicated to the memory of Professor Gary Gruenhage

Abstract. The article concerns a family of topologies defined by mixing topologies in spaces, which depends on subsets of spaces. In 2010, a family of topologies were defined by mixing the Euclidean topology and the Sorgenfrey line topology in the set $\mathbb{R}$ of real numbers ([19]). Since then, several authors have researched these topologies and their surroundings. The purpose of this article is to summarize the results on this topic obtained mostly in recent ten years.

Several topological properties, for example, the completeness, cardinal invariants, and the countable dense homogeneity are considered. The idea of inducing the family of topologies in [19] is applied to almost topological groups in [7]. We also have the Lindelőf property and the normality of the space of real valued continuous functions with the topology of pointwise convergence of these spaces. There are many variations of mixing topologies in spaces. We discuss topologies on $\mathbb{R}$ induced by mixing topologies other than the Euclidean and the Sorgenfrey topologies.

2020 *Mathematics Subject Classification.* Primary 54A10; Secondary 54F05, 54C35, 54H11.

Key words and phrases. Euclidean topology, Sorgenfrey line, Hattori spaces, almost topological groups, countable dense homogeniety, compact, σ-compact, $C_p(X)$, hybrid topology.

©2025 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.nipissingu.ca/tp/subscriptioninfo.html for information.