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by

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DENSITY OF THE OPEN-POINT, BI-POINT-OPEN, AND BI-COMPACT-OPEN TOPOLOGIES ON $C(X)$

ANUBHA JINDAL, R. A. McCOY, AND S. KUNDU

Abstract. This paper studies the density of the space $C(X)$, the space of all real-valued continuous function on a Tychonoff space X, equipped with the open-point, bi-point-open, and bi-compact-open topologies introduced by Anubha Jindal, R. A. McCoy, and S. Kundu in *The open-point and bi-point-open topologies on C(X)* (Topology Appl. **18** (2015), 62–74) and in *The bi-compact-open topology on C(X)* (Boll. Unione Mat. Ital. (2016). doi:10.1007/s40574-016-0095-8).

1. Introduction

The set $C(X)$ of all real-valued continuous functions on a Tychonoff space X has a number of natural topologies. One important type of topology on $C(X)$ is the set-open topology, introduced by Richard Arens and James Dugundji [1]. In the definition of a set-open topology on $C(X)$, we use a certain family of subsets of X and open subsets of $\mathbb{R}$. Two important set-open topologies on $C(X)$ are the point-open topology p and the compact-open topology k. In [3] and [5], by adopting a radically different approach, we have defined three new kinds of topologies on $C(X)$: the open-point, bi-point-open, and bi-compact-open topologies. One main reason for adopting such a different approach is to ensure that both X and $\mathbb{R}$ play equally significant roles in the construction of topologies on $C(X)$. This gives a function space where the functions get more involved in the behavior of the topology defined on $C(X)$.

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