ON WEAKLY $e$-CONTINUOUS FUNCTIONS

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Abstract
The main goal of this paper is to introduce and look into some of the fundamental properties of weakly $e$-continuous functions defined via $e$-open sets introduced by E. Ekici (On $e$-open sets, $D^e_P$-sets and $D^e_P^e$-sets and decompositions of continuity, Arab. J. Sci. Eng. 33 (2A), 269–281, 2008). Some characterizations and several properties concerning weakly $e$-continuous functions are obtained. The concept of weak
$e$-continuity is weaker than both the weak continuity introduced by N. Levine (A decomposition of continuity in topological spaces, Amer. Math. Monthly 68, 44–46, 1961) and the $e$-continuity introduced by Ekici, but stronger than weak $\beta$-continuity introduced by Popa and Noiri (Weakly $\beta$-continuous functions, An. Univ. Timis. Ser. Mat.-Inform. 32 (2), 83–92, 1994). In order to investigate some different properties we introduce the concept of $e$-strongly closed graphs and also investigate relationships between weak $e$-continuity and separation axioms, and $e$-strongly closed graphs and covering properties.

Keywords: Faint $e$-continuity, $e$-$T_2$ space, $e$-strongly closed graph, $e$-Lindelöf space, Weak $e$-continuity.

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1. Introduction
Throughout this paper $(X, \tau)$ and $(Y, \sigma)$ (or simply $X$ and $Y$) represent nonempty topological spaces on which no separation axioms are assumed unless otherwise stated. Let $X$ be a topological space and $A$ a subset of $X$. The closure of $A$ and the interior of $A$ are denoted by $\text{cl}(A)$ and $\text{int}(A)$, respectively. $\mathcal{U}(x)$ denotes all open neighborhoods of the point $x \in X$.

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