

## PROPERTIES OF $\alpha$ -OPEN SETS IN IDEAL GENERALIZED TOPOLOGICAL SPACES

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**Abstract.** The aim of this paper is to introduce and characterize the concepts of  $\alpha$ -open sets and their related notions in ideal generalized topological spaces. Moreover, we obtain the decomposition of  $(g, g')$ -continuity in ideal generalized topological space.

### 1. Introduction

In [1], Csaszar introduced the notions of generalized neighborhood systems and generalized topological spaces. He also introduced the notions of continuous functions and associated interior and closure operators on generalized neighborhood systems and generalized topological spaces. In the same paper he investigated characterizations of generalized continuous functions ( $= (g, g')$ -continuous functions). A subfamily  $g$  of the power set  $P(X)$  of a nonempty set  $X$  is called a generalized topology [1] on  $X$  if and only if  $\emptyset \in g$  and  $G_i \in g$  for  $i \in I \neq \emptyset$  implies  $G = \bigcup_{i \in I} G_i \in g$ . We call the pair  $(X, g)$  a generalized topological space (briefly GTS) on  $X$ . The members of  $g$  are called  $g$ -open sets [1] and the complement of a  $g$ -open set is called a  $g$ -closed set. The generalized closure of a set  $S$  of  $X$ , denoted by  $gCl(A)$ , is the intersection of all  $g$ -closed sets containing  $A$  and the generalized interior of  $A$ , denoted by  $gInt(A)$ , is the union of  $g$ -open sets included in  $A$ . The concept of ideals in topological spaces has been introduced and studied by Kuratowski [4] and Vaidyanathasamy [6]. An ideal  $\mathcal{I}$  on a topological space  $(X, \tau)$  is a nonempty collection of subsets of  $X$  which satisfies (i)  $A \in \mathcal{I}$  and  $B \subset A$  implies  $B \in \mathcal{I}$  and (ii)  $A \in \mathcal{I}$  and  $B \in \mathcal{I}$  implies  $A \cup B \in \mathcal{I}$ . The aim of this paper is to introduce and characterized the concepts of  $g$ - $\alpha$ - $\mathcal{I}$ -open sets and their related notions in ideal generalized topological spaces.

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