DECOMPOSITION OF $(\alpha-\mathbb{H}_\sigma, \lambda)$-CONTINUITY

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Abstract. In this new research paper we introduce and investigate the new kind of open sets $\alpha-\mathbb{H}_\sigma$-open, $\sigma-\mathbb{H}_\sigma$-open, $\pi-\mathbb{H}_\sigma$-open, $\beta-\mathbb{H}_\sigma$-open sets in hereditary generalized topological spaces. Also, we obtained a decomposition of $(\alpha-\mathbb{H}_\sigma, \lambda)$-continuity and decompositions of $(\mu, \lambda)$-continuity.

1. Introduction and Preliminaries

In the year 2002, Császár [5] introduced very usefull notions of generalized topology and generalized continuity. Consider $Z$ be a nonempty set and $\mu$ be a collection from the subsets of $Z$. Then $\mu$ is called a generalized topology (briefly GT) if $\emptyset \in \mu$ and an arbitrary union of elements from $\mu$ belongs to $\mu$. Let $\mu$ be a generalized topology on $Z$, the elements of $\mu$ are called $\mu$-open sets and the complement of $\mu$-open sets are called $\mu$-closed sets.

A subset $L$ of a space $(Z, \mu)$ is called as $\mu$-$\alpha$-open [6] (resp. $\mu$-$\sigma$-open [6], $\mu$-$\pi$-open [6], $\mu$-$\beta$-open [6]) if $L \subset i_\mu c_\mu i_\mu(L)$ (resp. $L \subset c_\mu i_\mu(L)$, $L \subset c_\mu i_\mu(L)$, $L \subset c_\mu i_\mu(L)$). Let $Z$ be a space. Then $\mu(x) = \{U : x \in U \in \mu\}$. A space $Z$ is called a $C_0$-space [14], if $C_0 = Z$, where $C_0$ is the set of all representative elements of sets of $\mu$ and $x$ is called a represent element of $u \in \mu$ if $u \subset v$ for each $v \in \mu(x)$. A nonempty family $\mathcal{H}$ of subsets of $Z$ is called as a hereditary class [7], if $L \in \mathcal{H}$ and $B \subset L$, then $B \in \mathcal{H}$. For each $L \subset Z$, $L^*(\mathcal{H}, \mu) = \{z \in Z : L \cap V \notin \mathcal{H}$ for all $V \in \mu$ such that $z \in V\}$[7]. For $L \subset Z$, define $c_\mu^*(L) = L \cup L^*(\mathcal{H}, \mu)$ and $\mu^* = \{L \subset Z : Z-L = c_\mu^*(Z-L)\}$. If $\mathcal{H}$ is a hereditary class on $Z$, then $(Z, \mu, \mathcal{H})$ is

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