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

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Abstract. In this new research paper we introduce and investigate the new kind of open sets α-$\mathcal{H}_\sigma$-open, σ-$\mathcal{H}_\sigma$-open, π-$\mathcal{H}_\sigma$-open, β-$\mathcal{H}_\sigma$-open sets in hereditary generalized topological spaces. Also, we obtained a decomposition of $(\alpha\text{-}\mathcal{H}_\sigma, \lambda)$-continuity and decompositions of (μ, λ)-continuity.

1. Introduction and Preliminaries

In the year 2002, Cs*á*sz*á*r [5] introduced very usefull notions of generalized topology and generalized continuity. Consider Z be a nonempty set and μ be a collection from the subsets of Z. Then μ is called a *generalized topology* (briefly GT) if $\emptyset \in \mu$ and an arbitrary union of elements from μ belongs to μ. Let μ be a generalized topology on Z, the elements of μ are called μ-open sets and the complement of μ-open sets are called μ-closed sets. The generalized-closure of a subset A of X, denoted by $c_\mu(A)$, is the intersection of all μ-closed sets containing A and the interior of A, denoted by $i_\mu(A)$, is the union of all μ-open sets contained in A. A subset L of a space (Z, μ) is called as*μ-α-open* [6] (resp. μ-σ-open [6], μ-π-open [6], μ-β-open [6]) if $L \subset i_\mu c_\mu i_\mu(L)$ (resp. $L \subset c_\mu i_\mu(L)$, $L \subset i_\mu c_\mu(L)$, $L \subset c_\mu i_\mu c_\mu(L)$). 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 μ 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 $L \subseteq Z$, $L^*(\mathcal{H}, \mu)$=$\{z \in Z : L \cap V \notin \mathcal{H}$ 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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