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## Topological Properties of Delta-Open Sets

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Veličko [1968] introduced the concepts of delta-closure and delta-interior operations. We introduce and study topological properties of delta-derived, delta-border, delta-frontier and delta-exterior of a set using the concept of delta-open sets and study also other properties of the well-known notions of delta-closure and delta-interior. We also introduce some new classes of topological spaces in terms of the concept of delta-D-sets and investigate some of their fundamental properties.



## On a finer topological space than $\tau_\theta$ and some maps

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In 1943, Fomin [4] introduced the notion of  $\theta$ -continuity. In 1966, the notions of  $\theta$ -open subsets,  $\theta$ -closed subsets and  $\theta$ -closure were introduced by Veličko [11] for the purpose of studying the important class of  $H$ -closed spaces in terms of arbitrary filterbases. He also showed that the collection of  $\theta$ -open sets in a topological space  $(X, \tau)$  forms a topology on  $X$  denoted by  $\tau_\theta$  (see also [6]). Dickman and Porter [8], [9], Joseph [5] continued the work of Veličko. Noiri and Jafari [7], Caldas et al. [1] and [2], Steiner [10] and Cao et al [3] have also obtained several new and interesting results related to these sets.

In this paper, we will offer a finer topology on  $X$  than  $\tau_\theta$  by utilizing the new notions of  $\omega_\theta$ -open and  $\omega_\theta$ -closed sets. We will also discuss some of the fundamental properties of such sets and some related maps.

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