

**MORE ON HOMEOMORPHISMS IN FUZZY HYPERSOFT  
TOPOLOGICAL SPACES AND THEIR APPLICATION IN  
COVID-19 DIAGNOSIS USING COTANGENT  
SIMILARITY MEASURE**

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**Abstract:** In this article,  $FH_yS$  homeomorphism,  $FH_yS$  semi homeomorphism,  $FH_yS$   $\delta$  homeomorphism,  $FH_yS$  pre homeomorphism,  $FH_yS$   $\delta$  pre homeomorphism,  $FH_yS$   $\delta$  semi homeomorphism,  $FH_yS$   $\delta\alpha$  homeomorphism,  $FH_yS$   $e$ -homeomorphism,  $FH_yS$   $e^*$  homeomorphism and various forms of  $FH_yS$  C homeomorphisms in  $FH_yS$  topological spaces are introduced and studied. Also, we have discussed the properties of various forms of  $FH_yS$  homeomorphisms. Moreover, a new cotangent similarity measure for  $FH_yS$  sets is introduced and applied in the Covid-19 diagnosis using an example.