

Applications and Properties of Conformable Fractional Gamma Three-Parameters Probability Distribution

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Abstract

The definition of a fractional conformable isotope as it relates to some fundamental ideas regarding the probability distribution of random variables is the main subject of this thesis. The density functions, cumulative distribution, survival, and hazard function are those ideas, where a fractional differential equation has been solved and its result was a three-parameters fractional gamma distribution and the application of its main properties. Also, some fractional properties such as: mean, variance, skewness, kurtosis, in addition to r^{th} moments were found. Moreover, fractional isotopes compatible with entropy scales such as Shannon, Rényi, and Tsallis will be presented.

Keywords: conformable fractional; conformable derivative; entropy; probability distribution; gamma with three parameters distribution.