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Characterization of Probability Distributions through Conditional Expectation of Function of Pair of Order Statistics

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SUMMARY

In this paper, two general classes of distributions $F(x) = 1 - e^{-ah(x)}$, $a \neq 0$ and $F^*(x) = e^{-ah(x)}$, $a \neq 0$, where $h(x)$ is a continuous, differentiable and monotonic function of $x\epsilon(\alpha, \beta)$ have been characterized through conditional expectation of difference of pair of order statistics. Further several deductions and particular cases are discussed.

Keywords: Order statistics, conditional expectation, characterization and continuous distributions.

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