A New Distribution and Application on the Lifetime Data

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Abstract : We introduce a new model called the Marshall-Olkin Rayleigh distribution which extends the Rayleigh distribution using Marshall-Olkin transformation and has increasing and decreasing shapes for the hazard rate function. Various structural properties of the new distribution are derived including explicit expressions for the moments, generating and quantile function, some entropy measures, and order statistics are presented. The model parameters are estimated by the method of maximum likelihood and the observed information matrix is determined. The potentiality of the new model is illustrated by means of real life data set.