

The Power Rayleigh Distribution with an Application on Hydrological Data

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Abstract

The Rayleigh distribution is used to model the lifetime of an object or a service time. In this paper, a new distribution with two parameters (Power Rayleigh distribution) is introduced. Statistical properties of the distribution such as density function, survival function, hazard function, moments, quantile function, residual life, order statistic and extreme value distribution are discussed. Maximum likelihood method is used to estimate the unknown parameters. Simulation Schemes are produced. Finally, an application of the model to real data set is presented to show the superiority of this new distribution by comparing the fitness with its special cases.

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