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THE STRESS-STRENGTH RELIABILITY FOR TWO MODELS OF FARLIE-GUMBEL-MORGENSTERN DISTRIBUTIONS WITH ESTIMATION BASED ON TYPE II DOUBLE CENSORED SAMPLES

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SUMMARY

In this paper the stress-strength reliability parameter $R = P(X_2 < X_1)$ is studied for two models of Farlie-Gumbel-Morgenstern distributions, namely Model I and Model II. In Model I the marginals of $X_1$and $X_2$are from different families of distributions, while in model II the marginals are from the same families of distributions, but not necessarily the same distributions. The families of distributions discussed are what we call the general exponential and the general inverse exponential form families. Characterizations of these families are presented associated with the parameter R. Estimations of R for both models are studied under Type II double censored data. The estimations discussed are non-Bayesian and Bayesian. A simulation study is performed for the sake of comparison of the estimators obtained. A real-life data example is presented to verify the availability of the models presented.

Keywords and phrases: Stress-Strength; Reliability; Farlie-Gumbel-Morgenstern Distributions; Bayesian Estimation; Non- Bayesian Estimation; Type II Double Censored Samples.

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