

Title: A Bivariate Extension of the Beta-Generated Distribution Derived from Copulas

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Abstract: There have been extensive studies on families of univariate distribution functions constructed based on beta distribution. These beta-generated distributions allow for more flexibility of modality and skewness in fitting data. In this talk, we introduce a new class of bivariate distributions whose marginals can be beta-generated. Copulas are employed to construct this bivariate extension of the beta-generated distributions. It is shown that when Archimedean copulas and convex beta generators are used in generating bivariate distributions, the copulas of the resulting distributions also belong to the Archimedean family. The coefficients of upper and lower tail dependence of the proposed bivariate distribution are examined. Further, the parameter estimation and simulation results are presented for beta generators.