



The family of multivariate beta copulas revisited

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Abstract

This article sheds new lights on the family of multivariate beta copulas that arises as the dependence structures of the multivariate generalized beta distribution of the second type. In particular, simple formulas for the computation of Kendall's measure of association are derived and the asymmetry properties are investigated. Also, the multivariate extreme-value attractor of the beta copula is identified and it is shown that the beta family is closed under conditioning and belongs to the class of one-factor copulas. The sampling properties of the rank-based maximum-likelihood estimator are investigated with simulations and the usefulness of the beta copulas for the modeling of multivariate datasets is illustrated on triathlon data.

Keywords Asymmetric dependence · Conditional copula · Extreme-value attractor · Kendall's tau · One-factor copulas · Vine decomposition

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