Adapting Some Copula Inference Procedures to the Presence of Ties

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When modeling the distribution of a multivariate continuous random vector using the so-called copula approach, it is not uncommon to have ties in the coordinate samples of the available data because of rounding or lack of measurement precision. Yet, the vast majority of existing inference procedures on the underlying copula were both theoretically derived and practically implemented under the assumption of no ties. Applying them nonetheless can lead to strongly biased results. Some of the existing statistical tests can however be adapted to provide meaningful results in the presence of ties. As it shall be illustrated in this presentation, it is the case of some tests of exchangeability, radial symmetry, extreme-value dependence and goodness of fit.

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