

Quasi-random numbers for copula models

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In this talk, we will report on some recent work where randomized low-discrepancy sequences are used to generate observations from copula models. In order to accomplish this task so that the resulting estimators have a smaller variance than Monte Carlo-based estimators, it is important to understand how the generation algorithm for the copula model interacts with the low-discrepancy sequence that is being used. With that in mind, we will describe a family of algorithms whose design is well suited for use with low-discrepancy sequences and leads to good empirical results on a financial example. We will also discuss some connections between this problem and generalized discrepancy measures.

This is joint work with Mathieu Cambou (Ecole Polytechnique Fédérale de Lausanne) and Marius Hofert (University of Waterloo).