Transform MCMC schemes for sampling intractable factor copula models

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Abstract

In financial risk management, modelling dependency within a random vector is crucial and a standard approach is the use of a copula model. A flexible family of copulas, known as the factor copulas, is formed by the copulas extracted from factor models. Sampling from a factor copula is equivalent to sampling from the factor model and applying the cumulative distribution function (c.d.f.) to each component of the sample. Nonetheless, in many models of interest the c.d.f.'s are not explicitly known. In this talk I'll present theoretical and numerical properties of a transform Markov Chain Monte Carlo (MCMC) scheme developed to efficiently compute expectations conditional to rare events in which the unconditional distribution is given by an intractable factor copula. (Joint work with Emmanuel Gobet and Cyril Benezet)

Keywords: Copula model, Markov chain Monte Carlo, sampling algorithm

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