

# Viewing copulas as special Markov kernels - some consequences

Wolfgang Trutschnig, Universität Salzburg

## Abstract

Using the one-to-one correspondence between two-dimensional copulas and special Markov kernels allows for a translation of various well-known copula-related concepts to the Markov kernel setting and opens the door both to the definition of strong metrics and their induced dependence measures as well as to surprising new mathematical and applied aspects of copulas. The talk will first recall the construction of metrics on the space all two-dimensional copulas, mention their main properties and then show that these metrics, contrary to the standard uniform one, strictly distinguish extreme kinds of statistical dependence. Again using Markov kernels the construction of very singular copulas whose conditional distribution functions are all strictly singular will be sketched, underlining the fact that copulas may exhibit surprisingly singular analytic behaviour. Finally, some very recent results on copulas maximizing the probability of joint default and the notion of 'typical' and 'atypical' copulas will be discussed.