Abstract: "Dependence Uncertainty, Fréchet-Bounds and Robust Option Pricing"

We consider the problem of finding arbitrage bounds for option prices of multi-asset options (i.e. options on multiple underlyings) in the case when only partial information of the assets' probability distribution is available. We focus on the case in which the one-dimensional marginal distribution of each individual asset is known but only partial information of the dependence structure between the assets is available. This is in the literature often referred to as dependence uncertainty. The problem has been extensively studied in two-asset case for which solutions were given by P. Tankov (2011) and C. Bernard et al. (2012). We generalize these results for options that depend on more than two assets. The solution is based on an improvement of the classical Fréchet-Hoeffding bounds that allows for a representation of partial information of the dependence structure.