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Breakpoint detection in dependance functions

The detection of a breakpoint in a series of observations finds many applications, e.g. in finance and hydrology. I will first discuss the results of a simulation study about a class of nonparametric procedures for univariate breakpoints. Then, I will address the problem of the detection of breakpoints for phenomena that imply several random variables. Specifically, I will introduce a new method to detect changes in a dependence structure and I will show how an approach based on copulas enables to develop a test whose conclusion is independent of possible changes in the marginal series. An asymptotically valid technique to compute p-values will be introduced and its efficiency for small samples will be shown. I will conclude my presentation by showing some simulation results and an analysis of hydrological data.