Semilinear copulas

Fabrizio Durante*

Starting with a seminal idea by Cuadras and Augé [1] (see also [8]), we present a class of bivariate copulas that could be expressed in the form

\[ C_f(u, v) = \min(u, v)f(\max(u, v)) \]

under some suitable assumptions on the generator \( f \).

The members of this family have some distinguished features that make them appealing for a variety of situations (presence of a singular component, non-trivial tail dependence, simulating algorithm); moreover, they can be interpreted as the dependence structures arising from a specific stochastic shock model [2, 3, 4]. Some novel statistical inference procedures will be presented [5].

Finally, a possible multivariate generalization will be discussed [6], together with possible applications in risk management [7].

References


*School of Economics and Management, Free University of Bozen-Bolzano, I-39100 Bolzano (Italy), e-mail: fabrizio.durante@unibz.it.