



A MULTIPLE LEVEL CURVE CUT-CRITERION FOR THE BIVARIATE UPPER ORTHANT CONVEX ORDER

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Abstract

A known sufficient condition for the bivariate upper orthant convex order based on a single level curve crossing condition between joint survival functions is revisited. Since the previously used copula criterion is flawed, it is replaced by a proper survival copula version and implies the reversed stochastic inequalities in the examples considered so far. Moreover, a generalized multiple level curve crossing condition for the bivariate upper orthant convex order is obtained. The new criterion applies to the stochastic comparison of a copula pair with two level curves and resolves an open question.

Keywords and phrases: stochastic order, bivariate dependence, survival copula, multiple level curve cut-criterion.

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