



**COMPATIBILITY CONDITIONS FOR THE MULTIVARIATE
NORMAL COPULA WITH GIVEN RANK
CORRELATION MATRIX**

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Abstract

We derive a set of constructive bounds on the rank correlation coefficients of a valid rank correlation matrix under which a joint normal distribution with a specified rank correlation matrix can be realized. As a by-product and important improvement of previous recent work, we state recursive iterative explicit closed form bounds for the correlation coefficients of arbitrary valid correlation matrices. Finally, a simple partial rank correlation test of compatibility for the multivariate normal copula is formulated.

Keywords and phrases: multivariate normal copula, linear correlation, rank correlation, positive semi-definite matrix, recursive algorithm, iterative algorithm.

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