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U-FUNCTIONS OF CONCOMITANTS OF ORDER STATISTICS

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Abstract: Let (X_i, Y_i), $1 \leq i \leq n$, be i.i.d. R^{1+d}1-valued random vectors. Denote by $Y_{[i:n]}$ the Y-value associated with the i-th order statistic $X_{i:n}$. Concomitants of order statistics may be used to exhibit special features of the dependence structure between X_i and Y_i. We prove various distributional limit theorems for so-called U-functions (of degree two) of concomitants. The method of proof is based on a new conditional projection lemma.

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