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Abstracts of Short Communications and Posters

Section:

12. Probability and Statistics

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Prokhorov, Yuri, Steklov Mathematical Institute, Moscow, Russia

A characterisation problem for quadratic forms in random variables

Let $Q(x_1, \ldots, x_n)$ be a positive definite quadratic form, $X_1, \ldots, X_n$ i. i. d. random variables, $Z_1, \ldots, Z_n$ i. i. d. standard normal variables.

If $Q(X_1, \ldots, X_n) \stackrel{d}{=} Q(Z_1, \ldots, Z_n)$ and the distribution of X-es is symmetric then $X_j \stackrel{d}{=} Z_j$ ($U \stackrel{d}{=} V$ means that random variables U and V have the same distribution).

This theorem admits many generalizations (they were obtained by V. Ulyanov, G. Kristoff and the author).