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12. Probability and Statistics

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Pseudo–isotropic random vectors and stochastic processes
E–topological vector space, E-valued symmetric random vector X is said to be pseudo-isotropic (or is said to have a pseudo-isotropic distribution) if for every $\xi \in E^*$, $\xi \neq 0$, there exists a positive constant $c(\xi)$ such that the distribution of $c(\xi)^{-1} < \xi, X >$ does not depend on ξ.

The investigations of pseudo-isotropic vectors started from Schoenberg questions (1938). All symmetric Gaussian vectors, symmetric stable vectors and mixtures of symmetric Gaussian, or symmetric stable vectors are pseudo–isotropic.

We present here most interesting results on pseudo–isotropic vectors hoping that they become more known for mathematicians. Let us note here only: If sum of two independent pseudo–isotropic vectors is pseudo–isotropic then they define the same quasi-norm c or they both are symmetric stable (R. Ger, M. Keane, J. Misiewicz).