ESTIMATES FOR TAIL PROBABILITIES OF QUADRATIC AND BILINEAR FORMS IN SUBGAUSSIAN RANDOM VARIABLES WITH APPLICATIONS TO THE LAW OF THE ITERATED LOGARITHM

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Abstract: We prove upper estimates for the tail probabilities of quadratic and bilinear forms in independent subgaussian random variables. These inequalities are used to get upper estimates in the law of iterated logarithm. It is shown that iterated logarithm behaviour in the class of random quadratic and bilinear forms is heterogeneous. Examples show that the results are sharp.

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