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A multivariate version of Hoeffding's inequality

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Abstract

In this paper a multivariate version of Hoeffding's inequality is proved about the tail distribution of homogeneous polynomials of Rademacher functions with an optimal constant in the exponent of the upper bound. The proof is based on an estimate about the moments of homogeneous polynomials of Rademacher functions which can be considered as an improvement of Borell's inequality in a most important special case.

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