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Second Order Concentration of Measure.

Abstract: We investigate the 2nd order concentration of measure phenomenon for functions with bounded 2nd order derivatives or differences measuring the deviation from some first order Hoeffding-type approximation of the function. We describe results for functions on the n -sphere and the Euclidean space as well as for functions of i.i.d. variables including functions on discrete spaces. We also discuss some applications of these results.

This is joint work with G. Chistyakov, S. Bobkov, and H. Sambale.