

On the stability of the Brascamp-Lieb inequality

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In this talk, we address the stability problem of the famous Brascamp-Lieb inequality for strictly log-concave probability measures on the Euclidean space. More precisely, if a given function almost satisfies the equality in the Brascamp-Lieb inequality, is it true that it is close in some sense to the underlying extremal functions ? Under some assumptions on the eigenvalues of the Hessian matrix of the associated potential, we prove that the distance to the extremal functions in quadratic norm is of order square root of the deficit parameter and involves the second positive eigenvalue of a convenient diffusion operator we wish to estimate. Our results are illustrated by some examples for which the usual uniform convexity assumption on the potential is relaxed. Joint work with M. Bonnefont (Bordeaux) and J. Serres (IMT).

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