
Quantitative isoperimetric inequalities for log-convex probability measures on the line.

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Abstract

We analyze the isoperimetric inequality for symmetric log-convex probability measures on the line. Using geometric arguments we first re-prove that extremal sets in the isoperimetric inequality are intervals or complement of intervals (a result due to Bobkov and Houdré). Then we give a quantitative form of the isoperimetric inequality, leading to a somehow anomalous behavior. Indeed, it could be that a set is very close to be optimal, in the sense that the isoperimetric inequality is almost an equality, but at the same time is very far (in the sense of the symmetric difference between sets) to any extremal sets!

REFERENCES

F. FEO, M. POSTERARO, ROBERTO C. (2014) *Quantitative isoperimetric inequalities for log-convex probability measures on the line*, JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, **420**, n.2, 879-907.

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