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Aula T2 (UB).

Isoperimetric inequalities for log-convex probability measure on the line

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ABSTRACT: We present some results about isoperimetric inequality for symmetric log-convex probability measures on the line. The problem is to find extremal sets that is sets of minimum perimeter among sets with fixed measure. We are able to solve this problem using geometric arguments, reproving a result of Bobkov and Houdré . Moreover we give an estimate of the difference between the perimeter of a set and the perimeter of the extremal set (quantitative isoperimetric inequality). This lead to 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! From the results on sets we derive quantitative functional inequalities of weak Cheeger type.