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Title: A new approach to sharp Sobolev and Gagliardo-Nirenberg inequalities

Mass transportation proofs of some sharp inequalities on \mathbb{R}^n with geometric content, like Sobolev and Gagliardo-Nirenberg inequalities, are given. This new approach is elementary and geometric, unlike the classical one by calculus of variations. Moreover, it makes no use of the Euclidean structure of \mathbb{R}^n , and thus the results can be stated for arbitrary norms on \mathbb{R}^n .