
STABILITY RESULTS FOR SOBOLEV AND LOGARITHMIC SOBOLEV INEQUALITIES

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Quantitative stability results are known for more than 30 years, from the celebrated paper of G. Bianchi and H. Egnell. However, stability results with explicit, dimensionally sharp constants and optimal norms for the Sobolev inequality were obtained only recently, in a joint work with M.J. Esteban, A. Figalli, R.L. Frank, and M. Loss. This has interesting consequences for the Gaussian logarithmic Sobolev inequality as well. The stability for the logarithmic Sobolev inequality can indeed be obtained either as a byproduct of the stability for the Sobolev inequality or by a direct proof. In a collaboration with G. Brigati and N. Simonov, results in stronger norms were also achieved under appropriate constraints. These progresses raise various new questions.

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