

Stability for the σ_2 Sobolev inequality on the sphere

It is known that the total σ_2 curvature of a metric conformal to the round one on the sphere, normalized by its volume, is uniquely (up to Möbius transformations) minimized by the round metric. We show that if a metric almost minimizes, then it is almost round (up to Möbius transformations). We obtain optimal exponents for two different notions of closeness. This is a stability result for an optimization problem whose Euler-Lagrange equation is fully nonlinear.

The talk is based on joint work with Jonas Peteranderl.