SHARP σ_k-SOBOLEV INEQUALITIES ON COMPACT RIEMANNIAN MANIFOLDS

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Study of best constants for the classical Sobolev inequality on a compact Riemannian manifold was motivated by Yamabe problem involving the scalar curvature. See, eg, [1] and [2] on best constants in this case. Recently, the k-Yamabe problem involving the σ_k scalar curvature has been studied (see [3]) and, just like the case related to the Yamabe problem, a study on σ_k-Sobolev inequality arises naturally. In this talk, we mention briefly some results on the exact value of the first σ_k-best constant and the validity of the sharp σ_k-Sobolev inequality.

References

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