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„Sharp estimates in scalar curvature geometry.“

Abstract:

Sharp inequalities on Riemannian manifolds subject to lower scalar curvature bounds have become an important aspect in the study of scalar curvature in the recent years, in particular due to a number of new conjectures raised by Gromov. This includes distance estimates under a uniform positive lower scalar curvature bound on certain compact manifolds with boundary, scalar curvature extremality properties of certain model spaces (e.g. Llarull's theorem: It is impossible to simultaneously increase the area and the scalar curvature on the sphere compared to the standard round metric), and various notions of width and enlargeability. In this talk, we will give an introduction to this type of questions and survey some results, with a slight bias towards methods based on the Dirac operator.