



复旦大学数学科学学院 数学综合报告会

报告题目: **The integral of the curvature**

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摘要: The classical Gauss-Bonnet theorem in 19th century links the integral of the curvature to the topology of compact manifolds in 2-dim case. The well-known Gauss-Bonnet-Chern theorem generalize this result to higher dimension in 1940's. On the other hand, Cohn-Vossen's inequality opened the door of estimating the integral of the curvature on non-compact manifolds in 2-dim in 1930's. However, the higher dimension version of Cohn-Vossen's inequality is still missing, although Yau posed one open question along this line in 1990's. We will survey the history of the study around the integral of the curvature, from Gauss, Bonnet, Chern, Yau to the current state, my recent research result will also be presented. No technical proofs in the talk, some elementary topology and Riemannian geometry knowledge is enough to understand most of the talk.

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