



北京理工大学

数学与统计学院学术报告

Norms of restriction of characters to submanifolds

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时间: 2024.1.20 10:30-11:30

地点: 文萃楼E909

摘要: In 2007, Burq-Gerard-Tzvetkov initiated the study of L_p norms of restrictions of the Laplacian eigenfunctions to submanifolds, as a method to understand distribution of Laplacian eigenfunctions on the whole manifold. They obtained results which are sharp on spheres but not at all sharp on other manifolds such as tori. Then in 2016, Marshall studied such questions on symmetric spaces, and obtained improvements of Burq-Gerard-Tzvetkov's bounds for restriction of joint eigenfunctions of invariant differential operators to maximal flats, conditional on some regularity assumptions on the spectral parameters associated to these joint eigenfunctions. In this talk, I will present unconditional results of Marshall's on compact Lie groups, and extend these results to submanifolds of maximal flats. In the meantime, I will provide sharp bounds of characters restricted to submanifolds of maximal flats. Key ingredients of proof include a most "economical" way of dismantling an irreducible root system, and lower bounds of the Weyl numerator of characters.