数学与系统科学研究院

计算数学所网络学术报告

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报告题目：

From Weyl conjecture to fundamental gap conjecture and beyond

邀请人：　郑伟英　研究员

报告时间：2021 年 6 月 2 日（周三）

上午 10:00-11:00

报告工具：腾讯会议 ID:（665 6236 3867）

入会密码：10190

会议链接：

https://meeting.tencent.com/s/t9vmgLmRBDDj

Abstract:

In this talk, I will begin with the Weyl's law and Weyl conjecture on the asymptotics of eigenvalues of the Laplacian operator and the Schrodinger operator (LO/SO) on bounded domains with Dirichlet boundary condition. Based on our recent numerical results by using a spectral method, I report some information on the reminder in the Weyl conjecture for the LO/SO. In addition, a generalized Weyl's law for the fractional Schrodinger operator (FSO) is proposed. Then I review the fundamental gap conjecture – difference between the first two smallest eigenvalues -- of the LO/SO. Again, based on our recent asymptotic and numerical results, we propose a gap conjecture on the fundamental gap of the FSO. In addition, different gaps of eigenvalues of the FSO are discussed and the ``unfolding'' gaps statistics of FSO is reported. Finally, fundamental gaps on energy and chemical potential of the Gross-Pitaevskii equation are studied asymptotically and numerically.

欢迎大家参加！