

**学术报告:** An open problem of Nikiforov on cycles with consecutive lengths

**报告人:** 宁博 (南开大学 副教授)

**报告时间:** 2021 年 3 月 13 日(周六)上午 9:00

**报告地点:** 腾讯会议 ID: 820 118 453

**联系人:** 林丽双 教授

欢迎广大师生参加!

**报告摘要:** Nikiforov posed the following open problem: What is the maximum  $C$  such that for all positive  $\varepsilon < C$  and sufficiently large  $n$ , every graph  $G$  of order  $n$  with spectral radius  $\rho(G) > \left\lfloor \sqrt{n^2/4} \right\rfloor$  contains a cycle of length  $l$  for each integer  $l \in [3, (C - \varepsilon)n]$ . This can be seen as a spectral version of a classical theorem in extremal graph theory, which says that any graph  $G$  contains all cycles  $C_l$  for each  $l \in [3, \lfloor (n+3)/2 \rfloor]$  if  $e(G) > n^2/4$ . We prove that  $C \geq 1/4$  by a novel method, which improves the existing bounds.

**报告人简介:** 宁博, 理学博士, 南洋理工大学访问学者。曾在天津大学任教, 现任南开大学副教授。研究兴趣主要是结构图论、极值图论和图谱理论, 在《Combinatorica》、《J. Combin. Theory Ser. B》、《Combin. Probab. Comput.》、《SIAM J. Discrete Math.》、《J. Graph Theory》等国际期刊上发表论文 40 余篇, 主持国家基金 2 项。

理学院

2021 年 3 月 8 日