**青年学术论坛邀请报告**

之一

题目: Spectral extremal value on cycles

报告人: 林辉球 副教授 (华东理工大学数学系)

时间: 2019年11月26日（周二）下午3点

地点: 数学楼401报告厅

报告摘要: A graph G is said to be H-free if H is not a subgraph of G. The Turan number is the maximum size of a simple H-free graph of order n. To determine the Turan numbers is a central problem in extremal graph theory. Up to now, there are few cases when the Turan number is Known. In contrast, Nikiforov posed a spectral type problem: What is the maximum spectral radius of a simple H-free graph of order n? In the past decades, much attention has been paid to this problem with extremal graphs.

This report is a survey on the spectral Turan problem.

之二

题目: Short proofs of some theorems on paths and cycles

报告人: 宁博 博士 (天津大学应用数学中心)

时间: 2019年11月26日（周二）下午4点

地点: 数学楼401报告厅

报告摘要: We present short proofs of three theorems on paths and cycles of graphs. The first theorem states that for any vertex x of a 2-connected graph of order n and size e, there is a cycle of length at least 2e/(n-1) passing through x. the second one says that

For any integer 1\le k \le \omega(G), there is a path of length at least

(k+1)(N(G, k+1)/N(G, k)+k-1, where N(G, j) denotes the number of copies of K\_j in G. These two results generalize classical theorems on cycles and paths of Erdos\_Gallai from 1959 respectively. The third one, due to Nikiforov, states that if the spectral radius of a graph is larger than or equal to the square root of its size, then it conatins a triangle, unless the graph is a complete bipartite graph (possibly together with some isolated vertices).