

THE LEAST EIGENVALUE OF GRAPHS WHOSE COMPLEMENTS ARE UNICYCLIC

YI WANG¹, YI-ZHENG FAN¹, XIAO-XIN LI²

AND

FEI-FEI ZHANG¹

¹ *School of Mathematical Sciences*
Anhui University, Hefei 230601, P.R. China

² *Department of Mathematics and Computer Sciences*
Chizhou University, Chizhou 247000, P.R. China

e-mail: wangy@ahu.edu.cn
fanyz@ahu.edu.cn
lxx@czu.edu.cn
zhangfeifei2403@126.com

Abstract

A graph in a certain graph class is called minimizing if the least eigenvalue of its adjacency matrix attains the minimum among all graphs in that class. Bell *et al.* have identified a subclass within the connected graphs of order n and size m in which minimizing graphs belong (the complements of such graphs are either disconnected or contain a clique of size $\frac{n}{2}$). In this paper we discuss the minimizing graphs of a special class of graphs of order n whose complements are connected and contains exactly one cycle (namely the class \mathcal{U}_n^c of graphs whose complements are unicyclic), and characterize the unique minimizing graph in \mathcal{U}_n^c when $n \geq 20$.

Keywords: unicyclic graph, complement, adjacency matrix, least eigenvalue.

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