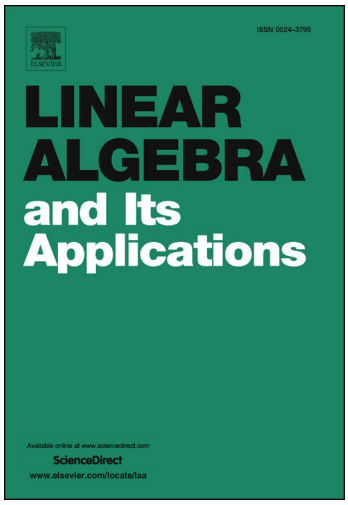
Accepted Manuscript



Integral complete multipartite graphs

Ravindra B. Bapat, Masoud Karimi

PII: S0024-3795(18)30136-8
DOI: https://doi.org/10.1016/j.laa.2018.03.026
Reference: LAA 14518

To appear in: *Linear Algebra and its Applications*

Received date: 1 March 2018
Accepted date: 12 March 2018

Please cite this article in press as: R.B. Bapat, M. Karimi, Integral complete multipartite graphs, *Linear Algebra Appl.* (2018), https://doi.org/10.1016/j.laa.2018.03.026

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

INTEGRAL COMPLETE MULTIPARTITE GRAPHS

RAVINDRA B. BAPAT[1]
MASOUD KARIMI[2,3]

[1]Indian Statistical Institute,
Delhi Centre, 7 S.J.S.S. Marg,
New Delhi 110 016, India
rbb@isid.ac.in

[2] School of mathematical sciences, Anhui university
Hefei, China
[3]Department of Mathematics, Bojnourd Branch,
Islamic Azad University, Bojnourd, Iran
karimimth@yahoo.com

Abstract. We give counterexamples to a result in F. Esser and F. Harary [2, Theorem 3] asserting that two nonisomorphic complete r-partite graphs with the same number of vertices have different spectral radii. We then derive some results on invariant factors and apply them to obtain relationship between the parameters of integral complete multipartite graphs and their integer eigenvalues. Necessary conditions for complete multipartite graphs to be integral are obtained.

AMS Classification: 05C50
Keywords: Smith normal form, complete multipartite graph, adjacency matrix

1. Introduction

We consider simple graphs, that is, graphs without loops or parallel edges. For basic notions in graph theory we refer to [12], whereas for preliminaries on graphs and matrices, see [1]. By the eigenvalues of a graph G, we mean the eigenvalues of its adjacency matrix. For a positive integer p, the complete graph of order p is denoted by K_p.

The disjoint union of G and H is denoted by $G \cup H$. The complement of G is denoted by $\overline{G}$. Thus $G \cup \overline{G}$ is a complete graph. The complete join of graphs G and H, denoted by $G \vee H$, is a graph with vertex set $V(G \vee H) := V(G) \cup V(H)$ and edge set

$$E(G \vee H) := E(G) \cup E(H) \cup \{uv \mid u \in V(G), v \in V(H)\}.$$

[3]Corresponding author.

Download English Version:

https://daneshyari.com/en/article/8897834

Download Persian Version:

https://daneshyari.com/article/8897834

Daneshyari.com