Electronic Journal of Linear Algebra ISSN 1081-3810 A publication of the International Linear Algebra Society Volume 22, pp. 586-592, June 2011



ON THE ESTRADA INDEX OF GRAPHS WITH GIVEN NUMBER OF CUT EDGES*

ZHIBIN DU^\dagger and BO ZHOU \ddagger

Abstract. Let G be a simple graph with eigenvalues $\lambda_1, \lambda_2, \ldots, \lambda_n$. The Estrada index of G is defined as $EE(G) = \sum_{i=1}^{n} e^{\lambda_i}$. In this paper, the unique graph with maximum Estrada index is determined among connected graphs with given numbers of vertices and cut edges.

Key words. Estrada index, Cut edge, Spectral moments, Pendant vertex.

AMS subject classifications. 05C50, 05C35, 05C90, 15A18.

^{*}Received by the editors on December 14, 2010. Accepted for publication on May 20, 2011. Handling Editor: Bryan Shader. This work was supported by National Natural Science Foundation of China (Grant No. 11071089).

[†]Department of Mathematics, Tongji University, Shanghai 200092, P.R. China (zhibindu@126.com).

[‡]Department of Mathematics, South China Normal University, Guangzhou 510631, P.R. China (zhoubo@scnu.edu.cn).