ON LOW RANK PERTURBATIONS OF COMPLEX MATRICES AND SOME DISCRETE METRIC SPACES

LEV GLEBSKY† AND LUIS MANUEL RIVERA‡

Abstract. In this article, several theorems on perturbations of a complex matrix by a matrix of a given rank are presented. These theorems may be divided into two groups. The first group is about spectral properties of a matrix under such perturbations; the second is about almost-near relations with respect to the rank distance.

Key words. Complex matrices, Rank, Perturbations.

AMS subject classifications. 15A03, 15A18.

* Received by the editors September 17, 2008. Accepted for publication June 8, 2009. Handling Editor: Roger A. Horn.
†IICO, Universidad Autonoma de San Luis Potosi, Mexico, (glebsky@cactus.iico.uaslp.mx).
‡Universidad Autonoma de Zacatecas, Mexico, (luismanuel.rivera@gmail.com).