

## NONNEGATIVE MATRICES WITH PRESCRIBED ELEMENTARY DIVISORS\*

RICARDO L. SOTO<sup>†</sup> AND JAVIER CCAPA<sup>†</sup>

**Abstract.** The inverse elementary divisor problem for nonnegative matrices asks for necessary and sufficient conditions for the existence of a nonnegative matrix with prescribed elementary divisors. In this work a Brauer type perturbation result is introduced. This result allows the construction, from a given a list of real or complex numbers  $\Lambda = \{\lambda_1, \dots, \lambda_n\}$ , of certain structured nonnegative matrices with spectrum  $\Lambda$  and with any legitimately prescribed elementary divisors.

**Key words.** Inverse elementary divisor problem, Nonnegative matrices.

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<sup>†</sup>Departamento de Matemáticas, Universidad Católica del Norte, Antofagasta, Casilla 1280, Chile (rsoto@ucn.cl, jccapa@ucn.cl). Supported by Fondecyt 1050026, Fondecyt 1085125, and Mecosup UCN0202, Chile. Part of this work was done while the authors were visiting at UC3M, Madrid, Spain.