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Realizable Lists on a Class of Nonnegative Matrices

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Abstract

A square matrix of order n with $n \geq 2$ is called *permutative matrix* when all its rows are permutations of the first row. In this paper recalling spectral results for partitioned into 2-by-2 symmetric blocks matrices sufficient conditions on a given complex list to be the list of the eigenvalues of a nonnegative permutative matrix are given. In particular, we study NIEP and PNIEP when some complex elements in the lists under consideration have non-zero imaginary part. Realizability regions for nonnegative permutative matrices are obtained. A Guo's realizability-preserving perturbations result is obtained.

Keywords:

permutative matrix; inverse eigenvalue problem; nonnegative matrix; circulant matrix; skew circulant matrix; Guo perturbations
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