On the intersection of the classes of doubly diagonally dominant matrices and $S$-strictly diagonally dominant matrices

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Abstract

We denote by $H_0$ the subclass of $H$-matrices consisting of all the matrices that lay simultaneously on the classes of doubly diagonally dominant (DDD) matrices ($A = [a_{ij}] \in \mathbb{C}^{n \times n} : |a_{ii}| |a_{jj}| \geq \sum_{k \neq i} |a_{ik}| \sum_{k \neq j} |a_{jk}|, i \neq j$; see [3]) and $S$-strictly diagonally dominant ($S$-SDD) matrices; see [1], [2]. Notice that strictly doubly diagonally dominant matrices (also called Ostrowsky matrices) are a subclass of $H_0$. Strictly diagonally dominant matrices (SDD) are also a subclass of $H_0$. In this paper we analyze some properties of the class $H_0 = \text{DDD} \cap \text{S-SDD}$.

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References


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