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PRODUCTS OF M-MATRICES AND NESTED SEQUENCES OF PRINCIPAL MINORS*

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Abstract. The question of whether or not the product of two nonsingular n-by-n M-matrices has a nested sequence of positive principal minors (abbreviated to a nest) is considered. For $n = 2, 3, 4$ such a product always has a nest, and this is conjectured for $n = 5$. For general n, examples of products of two M-matrices with specified structure are identified as having a leading or trailing nest. For $n = 4$, it is shown that the cube of an M-matrix need not have a nest.

Key words. M-matrix, Nested sequence of principal minors, P-matrix.

AMS subject classifications. 15A15.

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