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NON-EXISTENCE OF 5×5 FULL RAY-NONSINGULAR MATRICES*

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Abstract. An $n \times n$ complex matrix is full ray-nonsingular if it has no zero entries and every matrix obtained by changing the magnitudes of its entries is nonsingular. It is shown that a 5×5 full ray-nonsingular matrix does not exist. This, combined with earlier results, shows that there exists an $n \times n$ full ray-nonsingular matrix if and only if $n \leq 4$.

Key words. Ray-patterns, Ray-nonsingular matrices.

AMS subject classifications. 15A48, 15A57.

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