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PRODUCTS OF COMMUTING NILPOTENT OPERATORS*

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Abstract. Matrices that are products of two (or more) commuting square-zero matrices and matrices that are products of two commuting nilpotent matrices are characterized. Also given are characterizations of operators on an infinite dimensional Hilbert space that are products of two (or more) commuting square-zero operators, as well as operators on an infinite-dimensional vector space that are products of two commuting nilpotent operators.

Key words. Commuting matrices and operators, Nilpotent matrices and operators, Factorization, Products.

AMS subject classifications. 15A23, 15A27, 47A68, 47B99.

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