



A new extension of Hermite-Hermite matrix polynomials and their properties

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Abstract:

The main aim of this paper is to define and study of a new polynomial, say, two-index Hermite-Hermite matrix polynomials. An explicit representation, a matrix recurrence relation and matrix differential equations of these polynomials are presented. A new expansion of the matrix functions for a wide class of matrices in terms of two-index Hermite-Hermite matrix polynomials is proposed.

Keywords:

Matrix functions; Two-index Hermite-Hermite matrix polynomials; Matrix recurrence relation; Two-index Hermite-Hermite matrix differential equation.

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