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数学

k-广义Hermite矩阵及其在矩阵方程中的应用

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摘要:

给出了 k-广义Hermite矩阵的概念, 并给出了它的性质及其与酉矩阵、 Hermite矩阵、 Hamilton矩阵和广义逆矩阵之间的关系及其在解矩阵方程中的应用, 取得了一些新结果, 推广了酉矩阵、 Hermite矩阵及广义次对称矩阵的相应结果, 特别地将正交阵的广义Cayley分解推广到了 k-广义酉矩阵和k-广义Hermite矩阵上, 从而统一了各类Hermite矩阵及广义逆矩阵.

关键词: k-广义Hermite矩阵; 酉矩阵; 广义逆矩阵; 辛矩阵; 矩阵方程

k-Generalized Hermite Matrices and Their Application in Matrix Equation

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Abstract:

The concept of k-generalized Hermite matrix was given, and its properties and relations to unitary matrix, Hermite matrix, Hamilton matrix and generalized inverse matrix, and its matrix equation of application were discussed, with many new results obtained. The corresponding results of unitary matrix, Hermite matrix and generalized symmetric matrix, especially the Cayley decomposition of orthogonal matrix to k-generalized unitary matrix and k-generalized Hermite matrix were extended, unifying various kinds of Hermite matrix and generalized inverse matrix.

Keywords: k-generalized Hermite matrix unitary matrix; generalized inverse matrix; symplectic matrix; matrix equation

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