MULTIPLICATIVE PERTURBATION ANALYSIS FOR THE GENERALIZED CHOLESKY BLOCK DOWNDATING PROBLEM

MAHVISH SAMAR* AND XINZHONG ZHU

Abstract. This article is devoted to the multiplicative perturbation analysis of the generalized Cholesky block downdating problem. The strong rigorous multiplicative perturbation bounds are first presented by bringing together the modified matrix-vector equation approach with the technique of Lyapunov majorant function and the Banach fixed point theorem. Then, the weak rigorous multiplicative bounds are developed by using the matrix-equation approach. Numerical results demonstrate that these bounds are constantly tighter than the additive perturbation bounds.

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