

IMPROVED RIGOROUS MULTIPLICATIVE PERTURBATION BOUNDS FOR THE GENERALIZED CHOLESKY FACTORIZATION AND THE CHOLESKY-LIKE FACTORIZATION

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Abstract. Some improved rigorous multiplicative perturbation bounds for the generalized Cholesky factorization and the Cholesky-like factorization which are two generalizations of the classic Cholesky factorization are obtained by bringing together the modified matrix-vector equation approach with the method of Lyapunov majorant function and the Banach fixed point theorem. These bounds are continually tighter than the corresponding ones given in the literature.

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