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.

Keywords and phrases: Generalized Cholesky factorization, Cholesky-like factorization, multiplicative perturbation, Lyapunov majorant function, Banach fixed point theorem, rigorous perturbation bound.

REFERENCES


