

Computations with matrices with special bidiagonal decompositions

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Abstract

Bidiagonal factorization has played a crucial role for nonsingular totally nonnegative matrices (matrices with all their minors nonnegative). Important theoretical properties of these matrices can be deduced from this factorization. Moreover, the bidiagonal factorization allows us to perform accurately many computations with these matrices. There are other classes of matrices admitting a bidiagonal factorization. For instance, the class of strictly sign regular matrices, where the factorization can differ from that of totally nonnegative matrices. Here we present some recent advances on the computation with matrices with special bidiagonal factorizations.

Keywords

Bidiagonal decompositions, Totally nonnegative matrices, Sign regular matrices, Accurate computations.

References

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