

Determinants of interval matrices

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Abstract

In our talk we would like to address determinants of interval matrices – tightest interval enclosing determinants of all real matrices contained an interval matrix. We show some results on complexity of computing and approximating such interval determinants. Then we introduce various methods based on preconditioning, Hadamard inequality, Gaussian elimination and Cramer rule that enables us to compute at least enclosures of interval determinants. For symmetric matrices we can make use of known enclosures of eigenvalues, that can help to obtain better enclosures of interval determinant. We also present numerical properties of mentioned methods.

Keywords

Determinant, Interval matrix, Complexity, Testing properties.

Reference

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