

Parallel algorithms for matrix computations

Gallivan, K.A., author

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Abstrak

Describes a selection of important parallel algorithms for matrix computations. Reviews the current status and provides an overall perspective of parallel algorithms for solving problems arising in the major areas of numerical linear algebra, including (1) direct solution of dense, structured, or sparse linear systems, (2) dense or structured least squares computations, (3) dense or structured eigenvalues and singular value computations, and (4) rapid elliptic solvers. The book emphasizes computational primitives whose efficient execution on parallel and vector computers is essential to obtain high performance algorithms.

Consists of two comprehensive survey papers on important parallel algorithms for solving problems arising in the major areas of numerical linear algebra--direct solution of linear systems, least squares computations, eigenvalue and singular value computations, and rapid elliptic solvers, plus an extensive up-to-date bibliography (2,000 items) on related research.