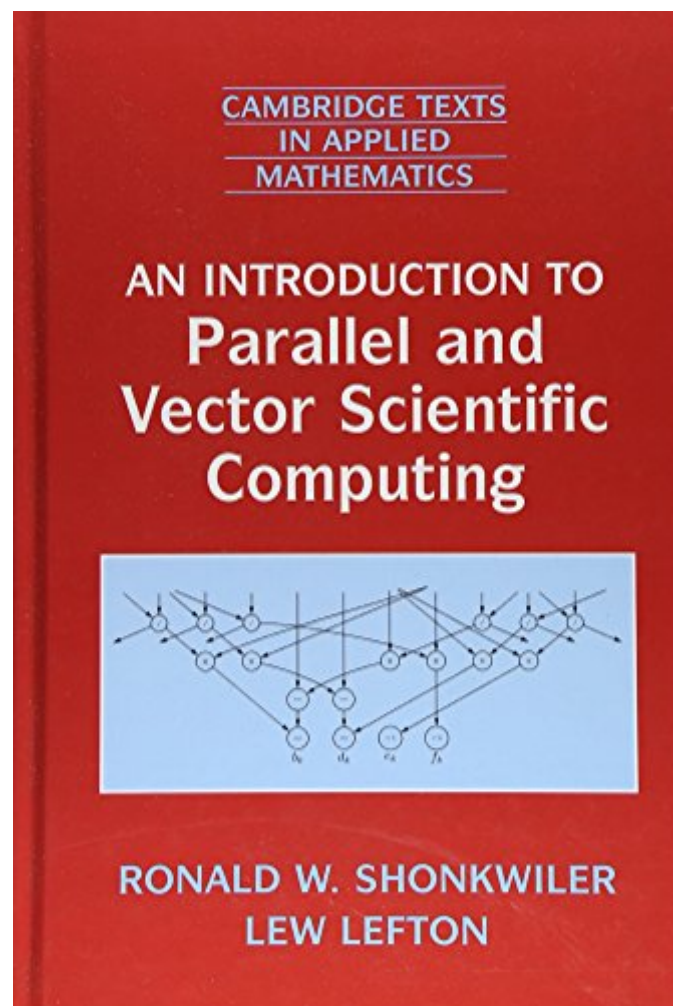


An Introduction to Parallel and Vector Scientific Computing (Cambridge Texts in Applied Mathematics) PDF



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An Introduction to Parallel and Vector Scientific Computing (Cambridge Texts in Applied Mathematics) by Ronald W. Shonkwiler, Lew Lefton ISBN 052186478X

In this text, students of applied mathematics, science and engineering are introduced to fundamental ways of thinking about the broad context of parallelism. The authors begin by giving the reader a deeper understanding of the issues through a general examination of timing, data dependencies, and communication. These ideas are implemented with respect to shared memory, parallel and vector processing, and distributed memory cluster computing. Threads, OpenMP, and MPI are covered, along with code examples in Fortran, C, and Java. The principles of parallel computation are applied throughout as the authors cover traditional topics in a first course in

scientific computing. Building on the fundamentals of floating point representation and numerical error, a thorough treatment of numerical linear algebra and eigenvector/eigenvalue problems is provided. By studying how these algorithms parallelize, the reader is able to explore parallelism inherent in other computations, such as Monte Carlo methods.

An Introduction to Parallel and Vector Scientific Computing (Cambridge Texts in Applied Mathematics) Review

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