Computational Mathematics: Models, Methods, and Analysis with MATLAB and MPI (Textbooks in Mathematics)

By Robert E. White

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Computational Mathematics: Models, Methods, and Analysis with MATLAB and MPI explores and illustrates this process. Each section of the first six chapters is motivated by a specific application. The author applies a model, selects a numerical method, implements computer simulations, and assesses the ensuing results. These chapters include an abundance of MATLAB code. By studying the code instead of using it as a "black box, " you take the first step toward more sophisticated numerical modeling. The last four chapters focus on multiprocessing algorithms implemented using message passing interface (MPI). These chapters include Fortran 9x codes that illustrate the basic MPI subroutines and revisit the applications of the previous chapters from a parallel implementation perspective. All of the codes are available for download from www4.ncsu.edu./~white.

This book is not just about math, not just about computing, and not just about applications, but about all three--in other words, computational science. Whether used as an undergraduate textbook, for self-study, or for reference, it builds the foundation you need to make numerical modeling and simulation integral parts of your investigational toolbox.

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Editorial Review

Review
Overall this book is not just about mathematics, not just about computing, and not just about applications, but about computational science. One interesting characteristic of this book is the writing style…another interesting thing found in this book is an abundance of MATLAB® code…this book is suitable for an undergraduate level topics course.
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