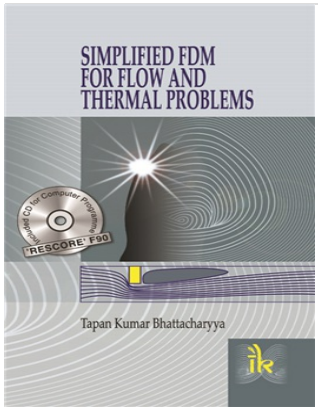
Book Information Sheet



Simplified FDM for Flow and Thermal Problems, 1/e

T.K. Bhattacharyya

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About the Book

This book is on finite difference method (FDM) for flow and thermal problems. The text describes a simplified finite difference method arrived at after a few decades of practically single-handed experience of solving flow and thermal problems using finite difference method. Because of its simplicity, anybody in the thermal field with some basic knowledge of programming can develop a program to solve any particular problem with very little effort. However, compressible flow involving shocks is not considered in this book. Finite difference method itself is a very simple method. However, its initial failure to solve transport problems called for serious developments. But these developments created various new and extremely useful concepts and approaches. However, the basic simplicity of the primitive finite difference method has been lost after these developments. The method presented in this text brings back the original simplicity of the finite difference method without sacrificing accuracy. It is meant for those students and researchers who wish to solve such problems as developing their own program with little effort. The advantage in doing this is that it is exactly known what the program is doing in all micro details.

Salient Features

- Spread over 14 chapters, it lays the fundamentals and applications part using the finite difference method.
- Both the primitive variable approach and the stream function vorticity approaches have been illustrated using the same basic finite differencing techniques.
- Appendix 1, explains ‘Rescore’ Fortran F90 Program, and appendix 2, gives the ‘Coreout’ result using sample data.

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