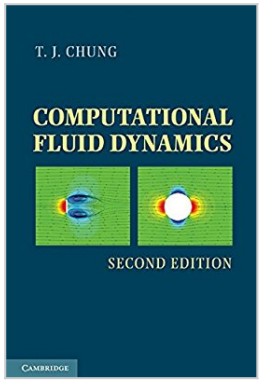

Computational Fluid Dynamics

By T. J. Chung

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The second edition of Computational Fluid Dynamics represents a significant improvement from the first edition. However, the original idea of including all computational fluid dynamics methods (FDM, FEM, FVM); all mesh generation schemes; and physical applications to turbulence, combustion, acoustics, radiative heat transfer, multiphase flow, electromagnetic flow, and general relativity is still maintained. This unique approach sets this book apart from its competitors and allows the instructor to adopt this book as a text and choose only those subject areas of his or her interest. The second edition includes a new section on preconditioning for EBE-GMRES and a complete revision of the section on flowfield-dependent variation methods, which demonstrates more detailed computational processes and includes additional example problems. For those instructors desiring a textbook that contains homework assignments, a variety of problems for FDM, FEM, and FVM are included in an appendix. To facilitate students and practitioners intending to develop a large-scale computer code, an example of FORTRAN code capable of solving compressible, incompressible, viscous, inviscid, 1D, 2D, and 3D for all speed regimes using the flowfield-dependent variation method is made available.

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Editorial Review

Review
"The book not only serves as a valuable reference for the practitioner, but also a self sufficient resource for the beginner...The book is well structured and proceeds from one level to the next without ambiguity...Chung is to be commended for his elucidating and thorough approach to all aspects of computional fluid dynamics." Choice

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About the Author
T. J. Chung is Distinguished Professor Emeritus of Mechanical and Aerospace Engineering at the University of Alabama, Huntsville. His research interests include numerical simulation of quantum gravity, plasma dynamics in fusion reactors, hypersonic turbulent flows, computational fluid dynamics, continuum mechanics, numerical modeling of combustion and propulsion, fluid dynamics, and heat and mass transfer. He has also authored seven other books, including General Continuum Mechanics and Applied Continuum Mechanics, both published by Cambridge University Press.

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