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Computational Fluid Dynamics

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THE BASICS WITH APPLICATIONS
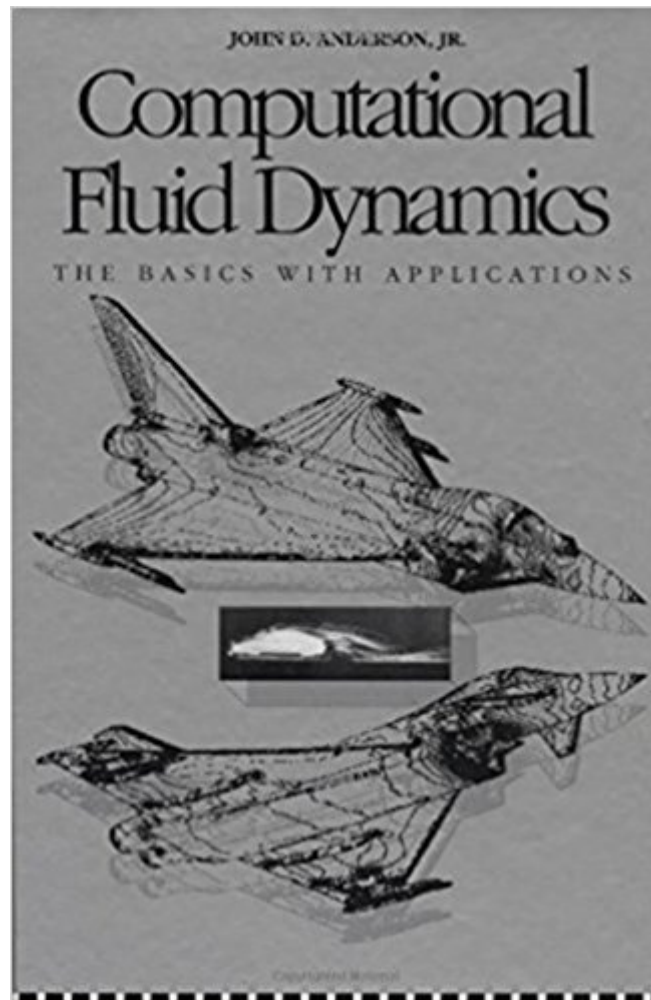
Synopsis

This pioneering text provides an excellent introduction to CFD at the senior level in aerospace and mechanical engineering, and to some extent, chemical and civil engineering. It can also serve as a one-semester introductory course at the beginning graduate level, as a useful precursor to a more serious study of CFD in advanced books. It is presented in a very readable, informal, enjoyable style.

Book Information

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Customer Reviews

Having suffered through several cryptic books on fluid dynamics, I found this one quite refreshing, and student friendly. The author spends a great deal of time developing and giving the reader an appreciation for the complete Navier-Stokes equations. Then he carefully explains the mathematical behavior of various flows, giving the reader an understanding of well posedness for different flow regimes. The section on discretization and solution techniques focuses on the right and wrong way to obtain stable solutions. Finally, the applications provide complete step by step guidance that is very helpful to the novice in this field. In the preface the author speaks of the "joys of CFD", and by the final chapter, the reader can indeed share this view. I wish this book had been around 22 years ago when I was in college - it's suitable for students and professionals.

Best book on CFD written by an engineer for engineers. Having suffered a lot with numerous books

written by mathematicians (obviously due to the complex mathematical notation they use), this book was clear, easy to understand and extremely student friendly. Starting with the Navier-Stokes eqns and their various forms, the author presents a sound mathematical background followed by basic numerical techniques for solving CFD problems. He sticks to the original motivation of writing a book on "introduction to CFD" and does not burden the reader with complex techniques or routines. However, he still reserves a chapter for the advanced modern techniques and gives latest approaches for tackling real-flow problems.Although the book is heavily loaded with examples from aeronautics, I believe it is still a good read for engineers from other braches of engineering including civil and environmental engineering.Excellent cross-referencing makes this item an easy read. Definitely recommended for all engineers who want to expand into the area of computational fluids.

In my opinion, this is the best book I have read in all my engineering life. The beauty of this book is in the author's ability to exactly understand what the students difficulties could possibly be and also help in removing the difficulties. NOBODY must read any other cryptic CFD book before he ventures into this superlative text. While reading this book I had a feeling of some professor standing in front of me, teaching with love in a simple and clear language. Believe me, you can finish the entire book in one sitting if you have some background in Fluid dynamics since it is downright clear, conveying and interesting.I personally have not found a teacher better than this book.

I am presently in my 4th year of a PhD in Astrophysics. While my background in the analytic portion of Fluid Dynamics is strong my understanding of how one discretizes and solves these equations numerically is somewhat lacking.I picked this book up as a starting point to more complicated methods and found it to be, hands down, one of the best texts I have ever read. It presents the material in a concise, clear, and physically motivated fashion which makes learning the topic incredibly straightforward.While this book is only a 'kicking off' point for more advanced techniques I think it is a must read for beginners and intermediate users. For the first timer to CFD the book will get you started down the right path armed with all the preliminary tools. For the more advanced user it will put aspects of the topic into an easier to understand light and perhaps shed more light on fundamentals that were presented poorly elsewhere.I'd give it ten stars, it's allowed me to crack into the code I'm using and really understand why it works as well as having set me down the path to a more advanced level of understanding of CFD.

If you want to learn CFD from the beginning, you must buy this book. It is simply the BEST, and I

hadn't enjoyed reading a technical book since long time ago.

This is an excellent text to introduce students to CFD. The writing is very clear and enjoyable. The only complaints I have are (1) too many typos for a text published in 1995 (where is the corrected printing?) and (2) the applications and examples are almost exclusively aerodynamic. This is still the best place to begin an exploration of CFD.

This is an excellent book for beginners. Anyone with some fluid dynamics and basic mathematics background will enjoy reading the book. It is an excellent resource for people not specializing in this area but would like to get some good ideas on the inner workings of CFD. But do not expect see more advanced topics or techniques covered by this book. But the book is not intended for that purpose.

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