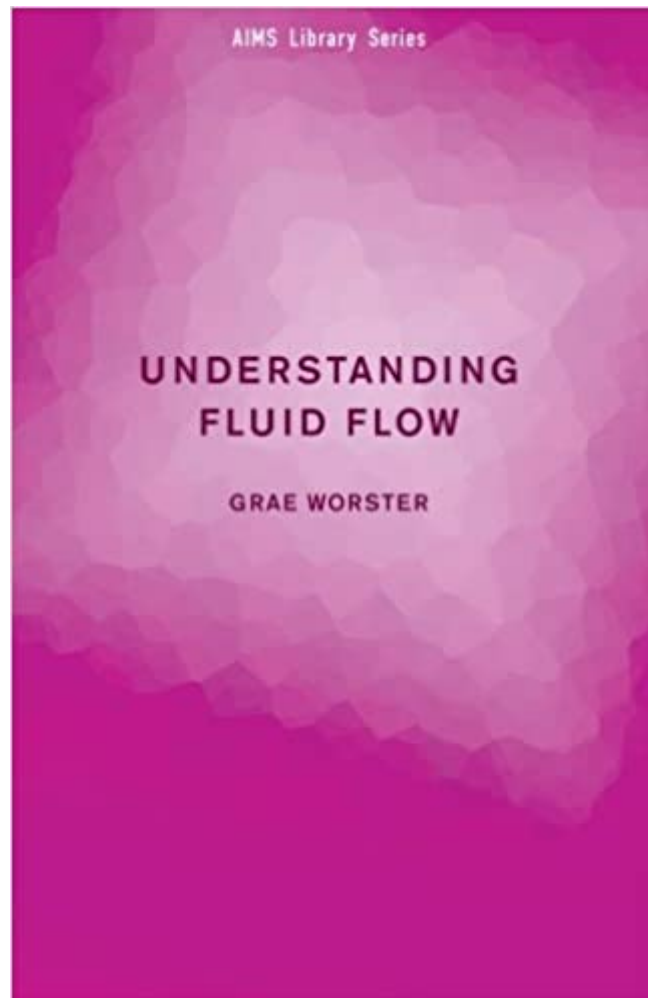


The book was found

# Understanding Fluid Flow (AIMS Library Of Mathematical Sciences)



## Synopsis

Understanding Fluid Flow takes a fresh approach to introducing fluid dynamics, with physical reasoning and mathematical developments inextricably intertwined. The 'dry' fluid dynamics described by potential theory is set within the context of real viscous flows to give fundamental insight into how fluids behave. The book gives a flavor of theoretical, experimental and numerical approaches to analyzing fluid flow, and implicitly develops skills in applied mathematical modeling of physical systems. It is supplemented by movies that are freely downloadable.

## Book Information

Series: AIMS Library of Mathematical Sciences

Paperback: 120 pages

Publisher: Cambridge University Press; 1 edition (December 14, 2009)

Language: English

ISBN-10: 0521132894

ISBN-13: 978-0521132893

Product Dimensions: 5.4 x 0.2 x 8.5 inches

Shipping Weight: 7.4 ounces (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #738,828 in Books (See Top 100 in Books) #211 in Books > Engineering & Transportation > Engineering > Chemical > Fluid Dynamics #636 in Books > Science & Math > Physics > Dynamics #744 in Books > Textbooks > Science & Mathematics > Mechanics

## Customer Reviews

"The accounts collated in this book...is encouraging, not only for the survival of the great apes, but the many other organisms that share their habitat". Peter Moore, Bulletin of the British Ecological Society  
"Worster is commended for rigorously articulating complex phenomena in these short lectures while unraveling the salient features of fluid dynamics, including flow separation and shear layer roll up due to advection of vortices, to name some examples." R.N. Laoulache, Choice Magazine  
"I found the book a pleasant read, and I could imagine lecturers finding the exposition helpful in providing tips for class material or a different perspective. I enjoyed the tack taken by the author and his selection of topics. The book certainly gives an idea of the wide application of the methods of mathematics and physics to problems in areas ranging from geophysics to engineering."  
Neil Balmforth, SIAM Review

Understanding Fluid Flow takes a fresh approach to introducing fluid dynamics, with physical reasoning and mathematical developments inextricably intertwined. It gives a flavour of theoretical, experimental and numerical approaches to analysing fluid flow, and implicitly develops skills in applied mathematical modelling. It is supplemented by movies that are freely downloadable.

If new to the subject, use this book to get a taste of what studying fluid mechanics would be like, and as a start in gaining some literacy in the field. This book emphasizes physical intuition and reasoning, such as scaling arguments and dimensional analysis, rather than formal mathematics. It discusses concepts such as parallel shear flows, boundary layers, viscous gravity current, vorticity dynamics, potential flow, separation and D'Alembert's paradox, aerodynamic lift, surface waves, ship wakes, and the Kelvin-Helmholtz instability. Read this little book, along with the two chapters on fluids in the *The Feynman Lectures on Physics (3 Volume Set) (Set v)*, to get acquainted with the subject. Follow up with a more traditional textbook--there are many good ones eg, Kundu & Cohen's *Fluid Mechanics with Multimedia DVD, Fourth Edition*--for a more comprehensive basic education, and recent volumes of the *Annual Review of Fluid Mechanics* for a cross section of current research.

[Download to continue reading...](#)

Understanding Fluid Flow (AIMS Library of Mathematical Sciences) Elementary Algebraic Geometry (Student Mathematical Library, Vol. 20) (Student Mathematical Library, V. 20) Applied Functional Analysis: Applications to Mathematical Physics (Applied Mathematical Sciences) (v. 108) Simple Mathematical Models of Gene Regulatory Dynamics (Lecture Notes on Mathematical Modelling in the Life Sciences) Mathematical Problems from Combustion Theory (Applied Mathematical Sciences) (v. 83) The Pursuit of History: Aims, methods and new directions in the study of history Curriculum and Aims, Fifth Edition (Thinking about Education) (Thinking About Education Series) Icelandic Magic - Aims, tools and techniques of the Icelandic sorcerers An Introduction to Fluid Dynamics (Cambridge Mathematical Library) Light Scattering, Size Exclusion Chromatography and Asymmetric Flow Field Flow Fractionation: Powerful Tools for the Characterization of Polymers, Proteins and Nanoparticles Viscous Fluid Flow (McGraw-Hill Mechanical Engineering) Compressible Fluid Flow (2nd Edition) Viscous Fluid Flow Entropy Generation Through Heat and Fluid Flow Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice, 4e (Fluid Therapy In Small Animal Practice) Understanding Nonlinear Dynamics (Textbooks in Mathematical Sciences) The Mathematical Theory of Non-uniform Gases: An Account of the Kinetic Theory of Viscosity, Thermal Conduction and Diffusion in Gases (Cambridge Mathematical Library) An

Introduction to the Mathematical Theory of Waves (Student Mathematical Library, V. 3)

Fundamentals of Thermal-Fluid Sciences Computational Fluid Mechanics and Heat Transfer, Third Edition (Series in Computational and Physical Processes in Mechanics and Thermal Sciences)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)