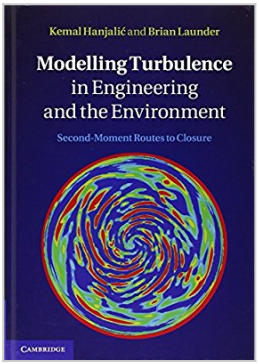

Modelling Turbulence in Engineering and the Environment: Second-Moment Routes to Closure

By Kemal Hanjali?, Brian Launder

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Modelling transport and mixing by turbulence in complex flows is one of the greatest challenges for CFD. This highly readable volume introduces the reader to a level of modelling that respects the complexity of the physics of turbulent flows - second-moment closure. Following introductory chapters providing essential physical background, the book examines in detail the processes to be modelled, from fluctuating pressure interactions to diffusive transport, from turbulent time and length scales to the handling of the semi-viscous region adjacent to walls. It includes extensive examples ranging from fundamental homogeneous flows to three-dimensional industrial or environmental applications. This book is ideal for CFD users in industry and academia who seek expert guidance on the modelling options available, and for graduate students in physics, applied mathematics and engineering who wish to enter the world of turbulent flow CFD at the advanced level.

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Editorial Review

Review
"The authors have been top researchers in the field for over forty years, and have collaborated many times, so their writing is seamless. Their passion, maturity, clarity, lucidity, and intellectual honesty are impressive in a field which has had its fair share of wild claims or simply near-delusions. This is a permanent, detailed, authoritative, and inspiring reference in a field of engineering science which will be very challenging, active, and important for years to come."
Philippe Spalart, SIAM News

About the Author
Kemo Hanjali? is Professor Emeritus at Delft University of Technology in The Netherlands. He has published extensively on the measurement, modelling and simulation of turbulence including heat transfer, combustion and magneto-fluid-dynamics. He is widely recognised as a major contributor to the development of mathematical models of turbulence and served for a decade as chairman of ERCOFTAC's special-interest group on turbulence modelling.

Brian Launder is Professor of Mechanical Engineering in the School of Mechanical, Aerospace and Civil Engineering at the University of Manchester. He played a central role in turbulence modelling development, working with his co-author in creating the first widely applied second-moment closure. More recently he has led the application of CFD to three-dimensional turbulent flows, especially in rotating systems, and to the development of the TCL strategy for turbulence modelling.

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