

turbulence

AN INTRODUCTION FOR
SCIENTISTS AND ENGINEERS

This is an advanced textbook on the subject of turbulence, and is suitable for engineers, physical scientists, and applied mathematicians. The aim of the book is to bridge the gap between the elementary accounts of turbulence found in undergraduate texts, and the more rigorous monographs on the subject.

Throughout, the book combines the maximum of physical insight with the minimum of mathematical detail. Chapters 1 to 5 may be appropriate as background material for an advanced undergraduate or introductory postgraduate course on turbulence, while Chapters 6 to 10 may be suitable as background material for an advanced postgraduate course on turbulence, or to act as a reference source for professional researchers.

This second edition covers a decade of advancement in the field, streamlining the original content while updating the sections where the subject has moved on. The expanded content includes large-scale dynamics, rotating turbulence, the increased power of direct numerical simulation, two-dimensional turbulence, magnetohydrodynamics, and turbulence in the core of the Earth.

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Cover image: Two-dimensional turbulence created using a soap film. Courtesy of M. Ward-Close, A. Dorn and B. R. Pearson