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	Sommario/riassunto	What do combustion engines, fusion reactors, weather forecast, ocean flows, our sun, and stellar explosions in outer space have in common? Of course, the physics and the length and time scales are vastly different in all cases, but it is also well known that in all of them, on some relevant length scales, the material flows that govern the dynamical and/or secular evolution of the systems are chaotic and often unpredictable: they are said to be turbulent. The interdisciplinary aspects of turbulence are brought together in this volume containing chapters written by experts from very different fields, including geophysics, astrophysics, and engineering. It covers several subjects on which considerable progress was made during the last decades, from

questions concerning the very nature of turbulence to some practical applications. These subjects include: a basic introduction into turbulence, statistical mechanics and nonlinear dynamics, turbulent convection in stars, atmospheric turbulence in the context of numerical weather predictions, magnetohydrodynamic turbulence, turbulent combustion with application to supernova explosions, and finally the numerical treatment of the multi-scale character of turbulence.