1. Record Nr. UNINA9910735779303321

Autore	Capuzzo Dolcetta Roberto A
Titolo	Physics of Fluids [[electronic resource] /] / by Roberto A. Capuzzo Dolcetta
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-30750-X
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (XII, 136 p. 26 illus., 19 illus. in color.)
Collana	UNITEXT for Physics, , 2198-7890
Disciplina	536.7
Soggetti	Thermodynamics Astrophysics Continuum mechanics Continuum Mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Chapter 1 Fluids and their fundamental aspects -- Chapter 2 The basic equations -- Chapter 3. Fluid flows in dierent environments -- 3.1. Fluids in terrestrial and astrophysical context -- Chapter 4. Discontinuities in fluid flows -- Chapter 5. Blast waves -- Chapter 6. Peculiar Fluid Dynamics -- Appendix Useful mathematical tools.
Sommario/riassunto	This book is exceptional in providing an up-to-date, but compact, introduction to the field of hydrodynamics and fluid dynamics that is both sufficiently comprehensive and easy to read. It covers all the elements of compressible and incompressible fluid dynamics, from the basic concepts through to the constituent equations and their applications. Fluid flows in different environments are thoroughly discussed, and specific aspects such as dissipation, turbulence, shock waves, and blast waves receive detailed attention. The book contains many exercises and draws attention to numerical solutions to specific problems. The book is ideal for undergraduate and graduate students and young researchers in physics, astrophysics, mathematics (pure and applied), and engineering. As this book is intended for a wide audience, the mathematical prerequisites are kept to a low level.