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Titolo	Handbook of Mathematical Analysis in Mechanics of Viscous Fluids [[electronic resource] /] / edited by Yoshikazu Giga, Antonin Novotny
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Nota di contenuto	Part 0 Derivation of Equations for incompressible and compressible fluids -- Modeling -- Part I Incompressible fluids -- Stokes approximation -- Steady viscous Newtonian fluids -- Unsteady viscous Newtonian fluids -- Regularity of nonstationary Navier-Stokes flow -- Mathematical theory for turbulence -- Incompressible fluids with various effects -- Free boundary problems -- Part II Compressible Fluids -- Equations and various concepts of solutions in the thermodynamics of compressible fluids -- Solutions for the one dimensional flows in the non steady case -- Global existence of weak solutions in several dimensions and their qualitative properties -- Regularity theory in the multidimensional non steady case -- Existence theory for the compressible steady flows -- Scale analysis and hydrodynamic limits within the equations of compressible fluids -- Examples of coupled systems including compressible fluids.-.
Sommario/riassunto	Mathematics has always played a key role for researches in fluid mechanics. The purpose of this handbook is to give an overview of

items that are key to handling problems in fluid mechanics. Since the field of fluid mechanics is huge, it is almost impossible to cover many topics. In this handbook, we focus on mathematical analysis on viscous Newtonian fluid. The first part is devoted to mathematical analysis on incompressible fluids while part 2 is devoted to compressible fluids.