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Nota di contenuto	Contents of Volumes II and III -- Preface -- 1 Basic Theory of ODE and Vector Fields -- 2 The Laplace Equation and Wave Equation -- 3 Fourier Analysis, Distributions, and Constant-Coefficient Linear PDE -- 4 Sobolev Spaces -- 5 Linear Elliptic Equation -- 6 Linear Evolution Equations -- A Outline of Functional Analysis -- B Manifolds, Vector Bundles, and Lie Groups -- Index. .
Sommario/riassunto	The first of three volumes on partial differential equations, this one introduces basic examples arising in continuum mechanics, electromagnetism, complex analysis and other areas, and develops a number of tools for their solution, in particular Fourier analysis, distribution theory, and Sobolev spaces. These tools are then applied to the treatment of basic problems in linear PDE, including the Laplace equation, heat equation, and wave equation, as well as more general elliptic, parabolic, and hyperbolic equations. The book is targeted at graduate students in mathematics and at professional mathematicians with an interest in partial differential equations, mathematical physics, differential geometry, harmonic analysis, and complex analysis. The

third edition further expands the material by incorporating new theorems and applications throughout the book, and by deepening connections and relating concepts across chapters. In includes new sections on rigid body motion, on probabilistic results related to random walks, on aspects of operator theory related to quantum mechanics, on overdetermined systems, and on the Euler equation for incompressible fluids. The appendices have also been updated with additional results, ranging from weak convergence of measures to the curvature of Kahler manifolds. Michael E. Taylor is a Professor of Mathematics at the University of North Carolina, Chapel Hill, NC. Review of first edition: “These volumes will be read by several generations of readers eager to learn the modern theory of partial differential equations of mathematical physics and the analysis in which this theory is rooted.” (Peter Lax, SIAM review, June 1998).