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Edizione	[Second, revised and extended edition.]
Descrizione fisica	1 online resource (291 p.)
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Soggetti	Differential equations, Partial
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Frontmatter -- Preface -- Contents -- Chapter 1. Motivation, Derivation of Basic Mathematical Models -- Chapter 2. Classification, Types of Equations, Boundary and Initial Conditions -- Chapter 3. Linear Partial Differential Equations of the First Order -- Chapter 4. Wave Equation in One Spatial Variable - Cauchy Problem in R -- Chapter 5. Diffusion Equation in One Spatial Variable - Cauchy Problem in R -- Chapter 6. Laplace and Poisson Equations in Two Dimensions -- Chapter 7. Solutions of Initial Boundary Value Problems for Evolution Equations -- Chapter 8. Solutions of Boundary Value Problems for Stationary Equations -- Chapter 9. Methods of Integral Transforms -- Chapter 10. General Principles -- Chapter 11. Laplace and Poisson equations in Higher Dimensions -- Chapter 12. Diffusion Equation in Higher Dimensions -- Chapter 13. Wave Equation in Higher Dimensions -- Appendix A. Sturm-Liouville Problem -- Appendix B. Bessel Functions -- Some Typical Problems Considered in this Book -- Notation -- Bibliography -- Index
Sommario/riassunto	This textbook is an elementary introduction to the basic principles of partial differential equations. With many illustrations it introduces PDEs on an elementary level, enabling the reader to understand what partial differential equations are, where they come from and how they can be solved. The intention is that the reader understands the basic principles which are valid for particular types of PDEs, and to acquire some

classical methods to solve them, thus the authors restrict their considerations to fundamental types of equations and basic methods. Only basic facts from calculus and linear ordinary differential equations of first and second order are needed as a prerequisite. The book is addressed to students who intend to specialize in mathematics as well as to students of physics, engineering, and economics.
