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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Classification of PDEs -- Models of mathematical physics -- Boundary value problems -- Cauchy problem for hyperbolic equations -- Fourier method for the wave equation -- Sturm-Liouville problems -- Boundary value problems for the heat equation -- Harmonic functions and their properties -- Boundary value problems for the Laplace equation -- Potential theory -- Elements of theory of integral equations -- Solution of boundary value problems for the Laplace equation -- Helmholtz equation -- Method of non-orthogonal series -- Bergman kernel approach -- Bibliography -- Index.
Sommario/riassunto	This textbook provides a thorough overview of mathematical physics, highlighting classical topics as well as recent developments. Readers will be introduced to a variety of methods that reflect current trends in research, including the Bergman kernel approach for solving boundary value and spectral problems for PDEs with variable coefficients. With its careful treatment of the fundamentals as well as coverage of topics not often encountered in textbooks, this will be an ideal text for both introductory and more specialized courses. The first five chapters present standard material, including the classification of PDEs, an introduction to boundary value and initial value problems, and an introduction to the Fourier method of separation of variables. More advanced material and specialized treatments follow, including practical methods for solving direct and inverse Sturm-Liouville

problems; the theory of parabolic equations, harmonic functions, potential theory, integral equations and the method of non-orthogonal series. Methods of Mathematical Physics is ideal for undergraduate students and can serve as a textbook for a regular course in equations of mathematical physics as well as for more advanced courses on selected topics.