1. Record Nr. UNISA996309148703316

Autore	Copley Leslie
Titolo	Mathematics for the physical sciences / / Leslie Copley; managing editor, Paulina Lesna-Szreter
Pubbl/distr/stampa	Warsaw, [Poland] ; ; Berlin, [Germany] : , : De Gruyter Open, , 2014 ©2014
ISBN	3-11-042624-2 3-11-040947-X
Descrizione fisica	1 online resource (445 pages) : illustrations
Disciplina	530.15
Soggetti	Mathematical physics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Front matter -- Contents -- Foreword -- 1 Functions of a Complex Variable -- 2 Cauchy's Theorem -- 3 The Calculus of Residues -- 4 Dispersion Representations -- 5 Analytic Continuation -- 6 Asymptotic Expansions -- 7 Padé Approximants -- 8 Fourier Series and Transforms -- 9 Ordinary Linear Differential Equations -- 10 Partial Differential Equations and Boundary Value Problems -- 11 Special Functions -- 12 Non-Homogeneous Boundary Value Problems: Green's Functions -- 13 Integral Equations -- Bibliography
Sommario/riassunto	The book begins with a thorough introduction to complex analysis, which is then used to understand the properties of ordinary differential equations and their solutions. The latter are obtained in both series and integral representations. Integral transforms are introduced, providing an opportunity to complement complex analysis with techniques that flow from an algebraic approach. This moves naturally into a discussion of eigenvalue and boundary vale problems. A thorough discussion of multi-dimensional boundary value problems then introduces the reader to the fundamental partial differential equations and "special functions" of mathematical physics. Moving to non-homogeneous boundary value problems the reader is presented with an analysis of Green's functions from both analytical and algebraic points of view. This leads to a

concluding chapter on integral equations.