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Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
Disciplina	515.9
Soggetti	Mathematical physics Functions of complex variables Theoretical, Mathematical and Computational Physics Mathematical Applications in the Physical Sciences Functions of a Complex Variable Mathematical Physics
Lingua di pubblicazione	Inglese
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Nota di contenuto	Basics -- Hypergeometric series with applications -- Integral equations -- Orthogonal polynomials -- Solutions to the problems.
Sommario/riassunto	The theory of complex functions is a strikingly beautiful and powerful area of mathematics. Some particularly fascinating examples are seemingly complicated integrals which are effortlessly computed after reshaping them into integrals along contours, as well as apparently difficult differential and integral equations, which can be elegantly solved using similar methods. To use them is sometimes routine but in many cases it borders on an art. The goal of the book is to introduce the reader to this beautiful area of mathematics and to teach him or her how to use these methods to solve a variety of problems ranging from computation of integrals to solving difficult integral equations. This is done with a help of numerous examples and problems with detailed solutions.