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Titolo	Geometric function theory [e-book] / edited by R. Kühnau
Pubbl/distr/stampa	Amsterdam : Elsevier North Holland, 2004
ISBN	9780444515476 044451547X
Descrizione fisica	1 online resource
Collana	Handbook of complex analysis ; 2
Altri autori (Persone)	Kühnau, Reiner
Altri autori (Enti)	ScienceDirect (Online service)
Disciplina	515.9
Soggetti	Geometric function theory
Lingua di pubblicazione	Inglese
Formato	Risorsa elettronica
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references
Nota di contenuto	Preface (R. Kühnau). -- Quasiconformal mappings in euclidean space (F.W. Gehring). -- Variational principles in the theory of quasiconformal maps (S.L. Krushkal). -- The conformal module of quadrilaterals and of rings (R. Kühnau). -- Canonical conformal and quasiconformal mappings. Identities. Kernel functions (R. Kühnau). -- Univalent holomorphic functions with quasiconform extensions (variational approach) (S.L. Krushkal). -- Transfinite diameter, Chebyshev constant and capacity (S. Kirsch). -- Some special classes of conformal mappings (T.J. Suffridge). -- Univalence and zeros of complex polynomials (G. Schmieder). -- Methods for numerical conformal mapping (R. Wegmann). -- Univalent harmonic mappings in the plane (D. Bshouty, W. Hengartner). -- Quasiconformal extensions and reflections (S.L. Krushkal). -- Beltrami equation (U. Srebro, E. Yakubov). -- The applications of conformal maps in electrostatics (R. Kühnau). -- Special functions in Geometric Function Theory (S.-L. Qin, M. Vuorinen). -- Extremal functions in Geometric Function Theory. Special functions. Inequalities (R. Kühnau). -- Eigenvalue problems and conformal mapping (B. Dittmar). -- Foundations of quasiconformal mappings (C. A. Cazacu). -- Quasiconformal mappings in value-distribution theory (D. Drasin, A.A. Goldberg, P. Poggi-Corradini)
Sommario/riassunto	Geometric Function Theory is that part of Complex Analysis which covers the theory of conformal and quasiconformal mappings. Beginning with the classical Riemann mapping theorem, there is a lot of

existence theorems for canonical conformal mappings. On the other side there is an extensive theory of qualitative properties of conformal and quasiconformal mappings, concerning mainly a priori estimates, so called distortion theorems (including the Bieberbach conjecture with the proof of the Branges). Here a starting point was the classical Schwarz lemma, and then Koebe's distortion theorem. There are several connections to mathematical physics, because of the relations to potential theory (in the plane). The Handbook of Geometric Function Theory contains also an article about constructive methods and further a Bibliography including applications eg: to electrostatic problems, heat conduction, potential flows (in the plane). A collection of independent survey articles in the field of Geometric Function Theory Existence theorems and qualitative properties of conformal and quasiconformal mappings A bibliography, including many hints to applications in electrostatics, heat conduction, potential flows (in the plane)
