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Descrizione fisica	1 online resource (315 p.)
Collana	Springer monographs in mathematics, , 1439-7382
Altri autori (Persone)	VorovichI. I <1920-2001.> (Iosif Izrailevich) CloudMichael J
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Soggetti	Functional analysis
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Metric, Banach, and Hilbert Spaces -- Mechanics Problems from the Functional Analysis Viewpoint -- Some Spectral Problems of Mechanics -- Elements of Nonlinear Functional Analysis -- Summary of Inequalities and Imbeddings -- Hints for Selected Problems -- References -- In Memoriam: Iosif I. Vorovich -- Index.-.
Sommario/riassunto	This book offers a brief, practically complete, and relatively simple introduction to functional analysis. It also illustrates the application of functional analytic methods to the science of continuum mechanics. Abstract but powerful mathematical notions are tightly interwoven with physical ideas in the treatment of nontrivial boundary value problems for mechanical objects. This second edition includes more extended coverage of the classical and abstract portions of functional analysis. Taken together, the first three chapters now constitute a regular text on applied functional analysis. This potential use of the book is supported by a significantly extended set of exercises with hints and solutions. A new appendix, providing a convenient listing of essential inequalities and imbedding results, has been added. The book should appeal to graduate students and researchers in physics, engineering, and applied mathematics. Reviews of first edition: "This book covers functional analysis and its applications to continuum mechanics. The presentation is concise but complete, and is intended for readers in continuum mechanics who wish to understand the mathematical

underpinnings of the discipline. . . . Detailed solutions of the exercises are provided in an appendix." (L'Enseignement Mathématique, Vol. 49 (1-2), 2003) "The reader comes away with a profound appreciation both of the physics and its importance, and of the beauty of the functional analytic method, which, in skillful hands, has the power to dissolve and clarify these difficult problems as peroxide does clotted blood. Numerous exercises . . . test the reader's comprehension at every stage. Summing Up: Recommended." (F. E. J. Linton, Choice, September, 2003).
