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Titolo	Implicit Functions and Solution Mappings : A View from Variational Analysis // by Asen L. Dontchev, R. Tyrrell Rockafellar
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Soggetti	Mathematical optimization Mathematical analysis Numerical analysis Optimization Analysis Numerical Analysis
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction and equation-solving background -- Solution mappings for variational problems -- Set-valued analysis of solution mappings -- Regularity properties through generalized derivatives -- Metric regularity in infinite dimensions -- Applications in numerical variational analysis.
Sommario/riassunto	The implicit function theorem is one of the most important theorems in analysis and its many variants are basic tools in partial differential equations and numerical analysis. This second edition of Implicit Functions and Solution Mappings presents an updated and more complete picture of the field by including solutions of problems that have been solved since the first edition was published, and places old and new results in a broader perspective. The purpose of this self-contained work is to provide a reference on the topic and to provide a unified collection of a number of results which are currently scattered throughout the literature. Updates to this edition include new sections in almost all chapters, new exercises and examples, updated commentaries to chapters and an enlarged index and references

section. From reviews of the first edition: "The book commences with a helpful context-setting preface followed by six chapters. Each chapter starts with a useful preamble and concludes with a careful and instructive commentary, while a good set of references, a notation guide, and a somewhat brief index complete this study. ... I unreservedly recommended this book to all practitioners and graduate students interested in modern optimization theory or control theory or to those just engaged by beautiful analysis cleanly described." (Jonathan Michael Borwein, IEEE Control Systems Magazine, February, 2012) "This book is devoted to the theory of inverse and implicit functions and some of its modifications for solution mappings in variational problems. ... The book is targeted to a broad audience of researchers, teachers and graduate students. It can be used as well as a textbook as a reference book on the topic. Undoubtedly, it will be used by mathematicians dealing with functional and numerical analysis, optimization, adjacent branches and also by specialists in mechanics, physics, engineering, economics, and so on." (Peter Zabreiko, Zentralblatt MATH, Vol. 1178, 2010) "The present monograph will be a most welcome and valuable addition. ... This book will save much time and effort, both for those doing research in variational analysis and for students learning the field. This important contribution fills a gap in the existing literature." (Stephen M. Robinson, Mathematical Reviews, Issue 2010).

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