

1. Record Nr.	UNINA9910459955403321
Autore	Bakonyi Mihaly
Titolo	Matrix completions, moments, and sums of hermitian squares [[electronic resource] /] / Mihaly Bakonyi and Hugo J. Woerdeman
Pubbl/distr/stampa	Princeton, N.J., : Princeton University Press, 2011
ISBN	1-283-10154-8 9786613101549 1-4008-4059-7
Edizione	[Course Book]
Descrizione fisica	1 online resource (533 p.)
Collana	Princeton series in applied mathematics
Altri autori (Persone)	WoerdemanHugo J
Disciplina	512.9434
Soggetti	Matrices Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Frontmatter -- Contents -- Preface -- Chapter 1. Cones of Hermitian matrices and trigonometric polynomials -- Chapter 2. Completions of positive semidefinite operator matrices -- Chapter 3. Multivariable moments and sums of Hermitian squares -- Chapter 4. Contractive analogs -- Chapter 5. Hermitian and related completion problems -- Bibliography -- Subject Index -- Notation Index
Sommario/riassunto	Intensive research in matrix completions, moments, and sums of Hermitian squares has yielded a multitude of results in recent decades. This book provides a comprehensive account of this quickly developing area of mathematics and applications and gives complete proofs of many recently solved problems. With MATLAB codes and more than 200 exercises, the book is ideal for a special topics course for graduate or advanced undergraduate students in mathematics or engineering, and will also be a valuable resource for researchers. Often driven by questions from signal processing, control theory, and quantum information, the subject of this book has inspired mathematicians from many subdisciplines, including linear algebra, operator theory, measure theory, and complex function theory. In turn, the applications are being pursued by researchers in areas such as electrical engineering, computer science, and physics. The book is self-contained, has many

examples, and for the most part requires only a basic background in undergraduate mathematics, primarily linear algebra and some complex analysis. The book also includes an extensive discussion of the literature, with close to 600 references from books and journals from a wide variety of disciplines.

2. Record Nr.	UNINA9910299947303321
Autore	Skalna Iwona
Titolo	Parametric Interval Algebraic Systems // by Iwona Skalna
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-75187-5
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (XXIV, 191 p. 26 illus.)
Collana	Studies in Computational Intelligence, , 1860-949X ; ; 766
Disciplina	006.3
Soggetti	Computational intelligence System theory Artificial intelligence Computational Intelligence Systems Theory, Control Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction -- Interval arithmetic -- Alternative arithmetic -- Interval and parametric interval matrices -- Linear systems -- Methods for solving parametric interval linear systems -- Methods for computing parametric solution -- Parametric interval linear programming problem.
Sommario/riassunto	This self-contained book presents a framework for solving a general class of linear systems with coefficients being continuous functions of parameters varying within prescribed intervals. It also provides a comprehensive overview of the theory related to solving parametric interval linear systems and the basic properties of parametric interval matrices. In particular, it develops several new algorithms delivering

sharp rigorous bounds for the solutions of such systems with full mathematical rigor. The framework employs the arithmetic of revised affine forms that enables the readers to handle dependent data. The book is intended not only for researchers interested in developing rigorous methods of numerical linear algebra, but also for engineers dealing with problems involving uncertain data. The theory discussed is also useful in various other fields of numerical analysis, in computer graphics, economics, computational geometry, computer-aided design, computer-assisted proofs, computer graphics, control theory, solving constraint satisfaction problems, and global optimization.

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