1.	Record Nr.	UNINA9910254305203321
	Autore	Friedman George J
	Titolo	Constraint Theory : Multidimensional Mathematical Model Management / / by George J. Friedman, Phan Phan
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
	ISBN	3-319-54792-5
	Edizione	[2nd ed. 2017.]
	Descrizione fisica	1 online resource (219 pages) : illustrations, tables
	Collana	IFSR International Series in Systems Science and Systems Engineering, , 1574-0463 ; ; 23
	Disciplina	620.0011
	Soggetti	Mathematical models
		Computational intelligence
		Computer science—Mathematics
		Artificial intelligence
		Mathematical Modeling and Industrial Mathematics
		Computational Intelligence
		Mathematics of Computing
		Artificial Intelligence
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Chapter 1, Motivations: What is Constraint Theory and why is it important? -- Chapter 2, The Four-Fold Way: How to Perceive Complex Mathematical Models and Well-Posed Problems -- Chapter 3, General Results: From Protomath to Math to Metamath -- Chapter 4, Regular Relations: Searching for the Kernels of Constraint -- Chapter 5, Model Consistency and Computational Allowability -- Chapter 6, Discrete and Interval Relations: The Diminished Utility of Metamodels -- Chapter 7, The Logical Structure of Constraint Theory: A Compact Summary -- Chapter 8, Examples of Constraint Theory Applied to Real-World Problems -- Chapter 9, Manager and Analyst Meet Again: Gists and Schizophrenia -- Appendices.
	Sommario/riassunto	Packed with new material and research, this second edition of George Friedman's bestselling Constraint Theory remains an invaluable reference for all engineers, mathematicians, and managers concerned

with modeling. As in the first edition, this text analyzes the way Constraint Theory employs bipartite graphs and presents the process of locating the "kernel of constraint" trillions of times faster than brute-force approaches, determining model consistency and computational allowability. Unique in its abundance of topological pictures of the material, this book balances left- and right-brain perceptions to provide a thorough explanation of multidimensional mathematical models. Much of the extended material in this new edition also comes from Phan Phan's PhD dissertation in 2011, titled "Expanding Constraint Theory to Determine Well-Posedness of Large Mathematical Models." Praise for the first edition: "Dr. George Friedman is indisputably the father of the very powerful methods of constraint theory." --Cornelius T. Leondes, UCLA "Groundbreaking work. ... Friedman's accomplishment represents engineering at its finest. ... The credibility of the theory rests upon the formal proofs which are interspersed among the illuminating hypothetical dialog sequences between manager and analyst, which bring out distinctions that the organization must face, en route to accepting Friedman's work as essential to achieve quality control in developing and applying large models." --John N. Warfield.

2. Record Nr.	UNINA9910254291303321
Titolo	Extended Abstracts Summer 2015 : Strategic Behavior in Combinatorial Structures; Quantitative Finance / / edited by Josep Díaz, Lefteris Kirousis, Luis Ortiz-Gracia, Maria Serna
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Birkhäuser, , 2017
ISBN	3-319-51753-8
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (VI, 139 p. 5 illus., 3 illus. in color.)
Collana	Research Perspectives CRM Barcelona, , 2509-7415 ; ; 6
Disciplina	516.13
Soggetti	Discrete mathematics
	Differential equations
	Dynamical systems
	Convex geometry
	Discrete geometry
	Probabilities
	Actuarial science
	Discrete Mathematics
	Differential Equations
	Dynamical Systems
	Convex and Discrete Geometry
	Probability Theory
	Actuarial Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Part-I -- Foreword -- On the Push & Pull Protocol for Rumour Spreading -- Random Walks that Find Perfect Objects and the Lovasz Local Lemma -- Logit Dynamics with Concurrent Updates for Local Interaction Games -- Logit Dynamics with Concurrent Updates for Local Interaction Games -- Carpooling in Social Networks -- Who to Trust for Truthful Facility Location? -- Metric and Spectral Properties of Dense Inhomogeneous Random Graphs -- On-Line List Colouring of Random Graphs -- Approximation Algorithms for Computing Maximin Share

Allocations -- An Alternate Proof of the Algorithmic Lovász Local Lemma -- Learning Game-Theoretic Equilibria via Query Protocols -- The Lower Tail: Poisson Approximation Revisited -- Population Protocols for Majority in Arbitrary Networks -- The Asymptotic Value in Finite Stochastic Games -- Almost All 5-Regular Graphs Have a 3-Flow -- Part-II -- Foreword -- On the Short-Time Behaviour of the Implied Volatility Skew for Spread Options and Applications -- An Alternative to CARMA Models via Iterations of Ornstein-Uhlenbeck Processes -- Euler-Poisson Schemes for Levy Processes -- On Time-Consistent Portfolios with Time-Inconsistent Preferences -- A Generic Decomposition Formula for Pricing Vanilla Options under Stochastic Volatility Models -- A Highly Efficient Pricing Method for European-Style Options Based on Shannon Wavelets -- A New Pricing Measure in the Barndor-Nielsen-Shephard Model for Commodity Markets.

| Sommario/riassunto | This book is divided into two parts, the first of which seeks to connect the phase transitions of various disciplines, including game theory, and to explore the synergies between statistical physics and combinatorics. Phase Transitions has been an active multidisciplinary field of research, bringing together physicists, computer scientists and mathematicians. The main research theme explores how atomic agents that act locally and microscopically lead to discontinuous macroscopic changes. Adopting this perspective has proven to be especially useful in studying the evolution of random and usually complex or large combinatorial objects (like networks or logic formulas) with respect to discontinuous changes in global parameters like connectivity, satisfiability etc. There is, of course, an obvious strategic element in the formation of a transition: the atomic agents "selfishly" seek to optimize a local parameter. However, up to now this game-theoretic aspect of abrupt, locally triggered changes had not been extensively studied. In turn, the book's second part is devoted to mathematical and computational methods applied to the pricing of financial contracts and the measurement of financial risks. The tools and techniques used to tackle these problems cover a wide spectrum of fields, like stochastic calculus, numerical analysis, partial differential equations, statistics and econometrics. Quantitative Finance is a highly active field of research and is increasingly attracting the interest of academics and practitioners alike. The material presented addresses a wide variety of new challenges for this audience. . |