1.	Record Nr.	UNINA9910299787103321
	Titolo	Numerical Analysis and Optimization : NAO-III, Muscat, Oman, January 2014 / / edited by Mehiddin Al-Baali, Lucio Grandinetti, Anton Purnama
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
	ISBN	3-319-17689-7
	Edizione	[1st ed. 2015.]
	Descrizione fisica	1 online resource (351 p.)
	Collana	Springer Proceedings in Mathematics & Statistics, , 2194-1009 ; ; 134
	Disciplina	510
	Soggetti	Numerical analysis Partial differential equations Differential equations Mathematical optimization Numerical Analysis Partial Differential Equations Ordinary Differential Equations Optimization
	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 at the end of each chapters.
	Nota di contenuto	A Conic Representation of the Convex Hull of Disjunctive Sets and Conic Cuts for Integer Second Order Cone Optimization -- Runge–Kutta methods for ordinary differential equations -- A Positive Barzilai-Borwein-Like Stepsize and An Extension for Symmetric Linear Systems -- Necessary Optimality Conditions for the Control of Partial Integro-Differential Equations -- The AMPL Modeling Language—an Aid to Formulating and Solving Optimization Problems -- An Interior-Point L1-Penalty Method for Nonlinear Optimization -- An L1-Penalty Scheme for the Optimal Control of Elliptic Variational Inequalities -- Dynamics Characterization Based Geo-Statistical Prior Sampling -- Solving Multiscale Linear Programs Using the Simplex Method in Quadruple Precision -- Real and Integer Extended Rank Reduction Formulas and Matrix Decompositions: A Review -- Distributed Block Coordinate Descent for Minimizing Partially Separable Functions -- Models for Optimization of Power Systems -- On Chubanov's Method

for Solving a Homogeneous Inequality System.

Sommario/riassunto

Presenting the latest findings in the field of numerical analysis and optimization, this volume balances pure research with practical applications of the subject. Accompanied by detailed tables, figures, and examinations of useful software tools, this volume will equip the reader to perform detailed and layered analysis of complex datasets. Many real-world complex problems can be formulated as optimization tasks. Such problems can be characterized as large scale, unconstrained, constrained, non-convex, non-differentiable, and discontinuous, and therefore require adequate computational methods, algorithms, and software tools. These same tools are often employed by researchers working in current IT hot topics such as big data, optimization and other complex numerical algorithms on the cloud, devising special techniques for supercomputing systems. The list of topics covered include, but are not limited to: numerical analysis, numerical optimization, numerical linear algebra, numerical differential equations, optimal control, approximation theory, applied mathematics, algorithms and software developments, derivative free optimization methods and programming models. The volume also examines challenging applications to various types of computational optimization methods which usually occur in statistics, econometrics, finance, physics, medicine, biology, engineering and industrial sciences.