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Titolo	Splitting Algorithms, Modern Operator Theory, and Applications // edited by Heinz H. Bauschke, Regina S. Burachik, D. Russell Luke
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Soggetti	Operator theory Calculus of variations Partial differential equations Functional analysis Numerical analysis Operator Theory Calculus of Variations and Optimal Control; Optimization Partial Differential Equations Functional Analysis Numerical Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	1. Convergence Rate of Proximal Inertial Algorithms Associated with Moreau Envelopes of Convex Functions (H. Attouch, J. Peypouquet) -- 2. Constraint Splitting and Projection Methods for Optimal Control of Double Integrator (H.H. Bauschke, R.S. Burachik, C.Y. Kaya) -- 3. Numerical Explorations of Feasibility Algorithms for Finding Points in the Intersection of Finite Sets (H.,H. Bauschke, S. Gretchko, W.M. Moursi) -- 4. Variable Metric ADMM for Solving Variational Inequalities with Monotone Operators Over Affine Sets (R. I. Bot, E.R. Csetnek, D. Meier) -- 5. Regularization of Ill-posed Problems with Non-Negative Solutions (C. Clason, B. Kaltenbacher, E. Resmerita) -- 6. Characterizations of Super-regularity and its Variants (A. Danillidis, D. R. Luke, M. Tam) -- 7. The Inverse Function Theorems of L.M. Graves (A.L. Dontchev) -- 8. Block-wise Alternating Direction Method of

Multipliers with Gaussian Back Substitution for Multiple-block Convex Programming (X. Fu, B. He, X. Wang, X. Yuan) -- 9. Variable Metric Algorithms Driven by Averaged Operations (L.E. Glaudin) -- 10. A Glimpse at Pointwise Asymptotic Stability for Continuous-time and Discrete-time Dynamics (R. Goebel) -- 11. A Survey on Proximal Point Type Algorithms for Solving Vector Optimization Problems (S-M Grad) -- 12. Non-polyhedral Extensions of the Frank and Wolfe Theorem (J.E. Martínez-Legaz, D. Noll, W. Sosa) -- 13. A Note on the Equivalence of Operator Splitting Methods (W.M. Moursi, Y. Zinchenko) -- 14. Quasidensity: A Survey and Some Examples (S. Simons) -- 15. On the Acceleration of Forward-Backward Splitting via an Inexact Newton Method (A. Themelis, M. Ahookosh, P. Patrinos) -- 16. Hierarchical Convex Optimization by the Hybrid Steepest Descent Method with Proximal Splitting Operators - Enhancements of SVM and Lasso (I. Yamada, M. Yamagishi) -- Appendix -- References.

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## Sommario/riassunto

This book brings together research articles and state-of-the-art surveys in broad areas of optimization and numerical analysis with particular emphasis on algorithms. The discussion also focuses on advances in monotone operator theory and other topics from variational analysis and nonsmooth optimization, especially as they pertain to algorithms and concrete, implementable methods. The theory of monotone operators is a central framework for understanding and analyzing splitting algorithms. Topics discussed in the volume were presented at the interdisciplinary workshop titled Splitting Algorithms, Modern Operator Theory, and Applications held in Oaxaca, Mexico in September, 2017. Dedicated to Jonathan M. Borwein, one of the most versatile mathematicians in contemporary history, this compilation brings theory together with applications in novel and insightful ways.

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