1. Record Nr. UNINA9910818715003321

Titolo	Nonlinear programming : proceedings of a symposium conducted by the Mathematics Research Center, The University of Wisconsin, Madison, May 4-6, 1970 / / edited by J. B. Rosen, O. L. Mangasarian, K. Ritter
Pubbl/distr/stampa	New York, New York ; ; London, England : , : Academic Press, Inc., , 1970 ©1970
ISBN	1-4832-7246-X
Descrizione fisica	1 online resource (503 p.)
Collana	Publication no. 25 of the Mathematics Research Center, The University of Wisconsin Nonlinear programming
Disciplina	519.7/6 519.76
Soggetti	Nonlinear programming
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 and index.
Nota di contenuto	Front Cover; Nonlinear Programming; Copyright Page; Table of Contents; Foreword; Preface; Chapter 1. A Method of Centers by Upper-Bounding Functions with Applications; ABSTRACT; Introduction; 1. The Method of Centers: A Summary with Modifications; 2. Method of Centers (General algorithm; 3. Method of Center by Upper-Bounding Functions; 4. Applications of the Method of Centers by Upper-BoundingFunctions; REFERENCES; Chapter 2. A New Algorithm for Unconstrained Optimization; ABSTRACT; 1. Introduction; 2. The Formula for Revising the Second DerivativeApproximation 3. An Outline of the New Algorithm4. Theorems on the New Algorithm; Acknowledgements; REFERENCES; Chapter 3. A Class of Methods for Nonlinear ProgrammingII Computational Experience; ABSTRACT; Introduction; 2. A Basic Approach; 3. Algorithms based on Variable Metric methods; 4. Inequality Constraints; REFERENCES; Chapter 4. Some Algorithms Based on thePrinciple of Feasible Directions; ABSTRACT; 1. Introduction; 2. Direction generators; 3. Unconstrained Optimization; 4. Linearly Constrained Nonlinear Programming; 5. A

partitioning method; REFERENCES
Chapter 5. Numerical Techniques in Mathematical ProgrammingABSTRACT; Introduction; A. THE USE OF LU DECOMPOSITION INEXCHANGE ALGORITHMS; B. THE QR DECOMPOSITION ANDQUADRATIC PROGRAMMING; C. THE SVD AND NONLINEAR LEASTSQUARES; REFERENCES; Chapter 6. A Superlinearly Convergent Method forUnconstrained Minimization; ABSTRACT; 1. Introduction; 2. Formulation of the problem, definitions and notation; 3. The algorithm; 4. Special convergence properties of the algorithm; REFERENCES; Chapter 7. A Second Order Method for the Linearly ConstrainedNonlinear Programming Problem; ABSTRACT; 1. Introduction
2. The algorithm3. Convergence of the Algorithm; 4. Rate of Convergence of the Algorithm; 5. Discussion; REFERENCES; Chapter 8. Convergent Step-Sizes for Gradient-Like FeasibleDirection Algorithms for Constrained Optimization; ABSTRACT; 1. Introduction; 2. Gradient-like feasible direction algorithms; 3. General stepsize criteria; 4. Step sizes based on minimization; 5. Step sizes based on a range function; 6. Step sizes based on a search procedure; 7 Example of directions: variable metric gradientprojections; REFERENCES; Chapter 9. On the Implementation of Conceptual Algorithms; ABSTRACT
1. Introduction2. Conceptual algorithms; 3. Adaptive Procedures for Implementation; 4. Open Loop Procedures for Implementation; 5. Conclusion; REFERENCES; Chapter 10. Some Convex Programs Whose DualsAre Linearly Constrained; ABSTRACT; 1. Introduction; 2. Dual problems; 3. The nature of problem(D1); 4. Examples; 5. Relationships between (P), (D)and (DI); REFERENCES; Chapter 11. Sufficiency Conditions and a Duality Theoryfor Mathematical Programming Problems in Arbitrary Linear Spaces; ABSTRACT; 1. Introduction; 2. Mathematical preliminaries and problem statement
3. Necessary conditions and sufficient conditions

Sommario/riassunto

Nonlinear Programming

2. Record Nr. UNINA9910337631103321

Autore	Könözsy László
Titolo	A New Hypothesis on the Anisotropic Reynolds Stress Tensor for Turbulent Flows : Volume I: Theoretical Background and Development of an Anisotropic Hybrid k-omega Shear-Stress Transport/Stochastic Turbulence Model / / by László Könözsy
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-13543-8
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (152 pages)
Collana	Fluid Mechanics and Its Applications, , 0926-5112 ; ; 120
Disciplina	532.0527015118
Soggetti	Fluid mechanics Fluids Computer science - Mathematics Probabilities Engineering Fluid Dynamics Fluid- and Aerodynamics Computational Science and Engineering Probability Theory and Stochastic Processes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1 Introduction -- 1.1 Historical Background and Literature Review -- 1.2 Governing Equations of Incompressible Turbulent Flows -- 1.3 Summary -- References -- 2 Theoretical Principles and Galilean Invariance -- 2.1 Introduction -- 2.2 Basic Principles of Advanced Turbulence Modelling -- 2.3 Summary -- References -- 3 The k-w Shear-Stress Transport (SST) Turbulence Model -- 3.1 Introduction -- 3.2 Mathematical Derivations -- 3.3 Governing Equations of the k-w SST Turbulence Model -- 3.4 Summary -- References -- 4 Three-Dimensional Anisotropic Similarity Theory of Turbulent Velocity Fluctuations -- 4.1 Introduction -- 4.2 Similarity Theory of Turbulent Oscillatory Motions -- 4.3 Summary -- References -- 5 A New Hypothesis on the Anisotropic Reynolds Stress Tensor -- 5.1 Introduction -- 5.2 The Anisotropic Reynolds Stress Tensor -- 5.3 An

Anisotropic Hybrid k-w SST/STM Closure Model for Incompressible Flows -- 5.4 Governing Equations of the Anisotropic Hybrid k-w SST/STM Closure Model -- 5.5 On the Implementation of the Anisotropic Hybrid k-w SST/STM Turbulence Model -- 5.6 Summary -- References -- Appendices: Additional Mathematical Derivations -- A.1 The Unit Base Vectors of the Fluctuating OrthogonalCoordinate System -- A.2 Galilean Invariance of the Unsteady Fluctuating VorticityTransport Equation -- A.3 The Deviatoric Part of the Similarity Tensor.

Sommario/riassunto

This book gives a mathematical insight--including intermediate derivation steps--into engineering physics and turbulence modeling related to an anisotropic modification to the Boussinesq hypothesis (deformation theory) coupled with the similarity theory of velocity fluctuations. Through mathematical derivations and their explanations, the reader will be able to understand new theoretical concepts quickly, including how to put a new hypothesis on the anisotropic Reynolds stress tensor into engineering practice. The anisotropic modification to the eddy viscosity hypothesis is in the center of research interest, however, the unification of the deformation theory and the anisotropic similarity theory of turbulent velocity fluctuations is still missing from the literature. This book brings a mathematically challenging subject closer to graduate students and researchers who are developing the next generation of anisotropic turbulence models. Indispensable for graduate students, researchers and scientists in fluid mechanics and mechanical engineering.