

H. FISCHER
B. RIEDMÜLLER · S. SCHÄFFLER
Editors

Applied Mathematics and Parallel Computing

Festschrift
for
KLAUS RITTER



Physica-Verlag
A Springer-Verlag
Company

Contents

Informatics and the Internal Necessity for the Mathematization of the Sciences <i>Nikolaos Apostolatos</i>	1
A New Semi-infinite Programming Method for Nonlinear Approximation <i>Miroslav D. Ašić and Vera V. Kovačević-Vujčić</i>	11
Exhibition Organized by Klaus Ritter on the Occasion of the 125th Anniversary of the Technical University of Munich <i>Ludwig Barnerβoi</i>	23
Concavity of the Vector-Valued Functions Occuring in Fuzzy Multiobjective Decision-Making <i>Fred A. Behringer</i>	35
An Algorithm for the Solution of the Parametric Quadratic Programming Problem <i>Michael J. Best</i>	57
Optimal and Asymptotically Optimal Equi-partition of Rectangular Domains via Stripe Decomposition <i>Ioannis T. Christou and Robert R. Meyer</i>	77
Trust-Region Interior-Point Algorithms for Minimization Problems with Simple Bounds <i>John E. Dennis and Luís N. Vicente</i>	97
Adaptive Kernel Estimation of a Cusp-shaped Mode <i>Werner Ehm</i>	109
Automatic Differentiation: The Key Idea and an Illustrative Example <i>Herbert Fischer</i>	121
An Approach to Parallelizing Isotonic Regression <i>Anthony J. Kearsley, Richard A. Tapia and Michael W. Trosset</i>	141
Mathematical Programming at Oberwolfach <i>Bernhard Korte</i>	149
A SQP-Method for Linearly Constrained Maximum Likelihood Problems <i>Christian Kredler</i>	157
Machine Learning via Polyhedral Concave Minimization <i>Olvi L. Mangasarian</i>	175

Optimization Concepts in Autonomous Mobile Platform Design <i>Vladimír Mařík, Libor Přeučil and Petr Štěpán</i>	189
A Fuzzy Set Approach for Optimal Positioning of a Mobile Robot Using Sonar Data <i>Martin Pfingstl and Stefan Schäffler</i>	211
Gradient Computation by Matrix Multiplication <i>Louis B. Rall</i>	233
Simulating Ultrasonic Range Sensors on a Transputer Workstation <i>Michael Rempter</i>	241
A Modular Architecture for Optimization Tutorials <i>Bruno Riedmüller and Guillermina Schröder</i>	255
Differential Stability Conditions for Saddle Problems on Products of Convex Polyhedra <i>Stephen M. Robinson</i>	265
Large-Scale Global Optimization on Transputer Networks <i>Stefan Schäffler</i>	275
The Statistical Art of Maximizing the Likelihood <i>Walter Schlee</i>	291
Remote Access to a Transputer Workstation <i>Rolf Schöne and Waldemar Schultz</i>	303
An Extension of Multivariate Reliability Systems <i>Alfred Schöttl</i>	315
Automatic Differentiation: A Structure-Exploiting Forward Mode with Almost Optimal Complexity for Kantorovič Trees <i>Michael Ulbrich and Stefan Ulbrich</i>	327
Approximate Structured Optimization by Cyclic Block-Coordinate Descent <i>Jorge Villavicencio and Michael D. Grigoriadis</i>	359
Author Index	373



9 783790 809398

ISBN 3-7908-0939-X