1. Record Nr. UNINA9910146316903321

   Autore Burkard R

   Titolo Computational Mathematics Driven by Industrial Problems : Lectures given at the 1st Session of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Martina Franca, Italy, June 21-27, 1999 / / by R. Burkard, P. Deuflhard, A. Jameson, J.-L. Lions, G. Strang ; edited by V. Capasso, H.W. Engl, J. Periaux

   Pubbl/distr/stampa Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2000

   ISBN 3-540-44976-0

   Edizione [1st ed. 2000.]

   Descrizione fisica 1 online resource (X, 426 p.)

   Collana C.I.M.E. Foundation Subseries ; ; 1739

   Disciplina 511.8

   Soggetti Computer science—Mathematics
   Calculus of variations
   Numerical analysis
   System theory
   Probabilities
   Thermodynamics
   Mathematics of Computing
   Calculus of Variations and Optimal Control; Optimization
   Numerical Analysis
   Systems Theory, Control
   Probability Theory and Stochastic Processes

   Lingua di pubblicazione Inglese

   Formato Materiale a stampa

   Livello bibliografico Monografia

   Note generali Bibliographic Level Mode of Issuance: Monograph

   Nota di contenuto Trees and paths: graph optimisation problems with industrial applications -- Mathematical models for polymer crystallization processes -- Differential equations in technology and medicine: Computational concepts, adaptive algorithms, and virtual labs -- Inverse problems and their regularization -- Aerodynamic shape optimization techniques based on control theory -- Complexity in industrial problems some remarks -- Flow and heat transfer in pressing of glass products -- Drag reduction by active control for flow past cylinders -- Signal processing for everyone.

Sommario/riassunto   These lecture notes by very authoritative scientists survey recent advances of mathematics driven by industrial application showing not only how mathematics is applied to industry but also how mathematics has drawn benefit from interaction with real-word problems. The famous David Report underlines that innovative high technology depends crucially for its development on innovation in mathematics. The speakers include three recent presidents of ECMI, one of ECCOMAS (in Europe) and the president of SIAM.