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   Classificazione   65-xx35-xx68-xx92-xx

   Soggetti   Numerical analysis
                       Differential equations
                       Mathematics for scientists & engineers
                       Theoretical methods
                       Partial differential equations
                       Computer science
                       Biology and other natural sciences

   Lingua di pubblicazione   Inglese

   Formato   Materiale a stampa

   Livello bibliografico   Monografia

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Sommario/riassunto	The International Council for Industrial and Applied Mathematics (ICIAM) is the worldwide organisation of societies which are dedicated primarily or significantly to applied and/or industrial mathematics. The ICIAM Congresses, held every 4 years, are run under the auspices of the Council with the aim to advance the applications of mathematics in all parts of the world. The 6th ICIAM Congress was held in Zurich, Switzerland, 16-20 July 2007, and was attended by more than 3000 scientists from 47 countries. This volume collects the invited lectures of this Congres, the appreciations of the ICIAM Prize winners' achievements and the Euler Lecture celebrating the 300th anniversary of Euler. The authors of these papers are leading researchers of their fields, rigorously selected by a distinguished international program committee. The book presents an overview of contemporary applications of mathematics, new perspectives and open problems. Topics embrace analysis of and numerical methods for: linear and nonlinear partial differential equations multiscale modeling nonlinear problems involving integral operators controllability and observability asymptotic solutions of Hamilton-Jacobi equations contact problems in solid mechanics topology optimization of structures dissipation inequalities in systems theory greedy algorithms sampling in function space order-value optimization parabolic partial differential equations and deterministic games Moreover, particular applications involve risk in financial markets, radar imaging, brain dynamics, complex geometric optics applied to acoustics and electromagnetics.