1.	Record Nr.	UNINA9910956306203321
	Titolo	Frontiers and prospects of contemporary applied mathematics / / editors, Tatsien Li, Pingwen Zhang
	Pubbl/distr/stampa	Beijing, China, : Higher Education Press
		Singapore ; ; New Jersey, : World Scientific, c2005
	ISBN	9786611919337
		9781281919335
		1281919330
		9789812774194
		981277419X
	Edizione	[1st ed.]
	Descrizione fisica	1 online resource (276 p.)
	Collana	Series in contemporary applied mathematics ; ; 6
	Altri autori (Persone)	LiDaqian
		ZhangPingwen
	Disciplina	510.285
		620.001/51
		620.00151
	Soggetti	Engineering mathematics
		Biomathematics
		Mathematics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	"During the period of the 8th Annual Conference of the China Society for Industrial and Applied Mathematics (CSIAM) held on August 24-30, 2004 in Xiangtan, Hunan Province, China, the Symposium on Frontiers and Prospects of Contemporary Applied Mathematics was held"--Pref.
	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	Contents ; Preface ; Invited Talks ; An Iterative BEM for the Inverse Problem of Detecting Corrosion in a Pipe ; 1 Introduction ; 2 Formulation of the inverse problem ; 3 The iterative boundary element method for this Cauchy problem ; 4 Numerical results for the inverse problem 5 Conclusions References ; Analysis of the Local Quasicontinuum Method ; 1 Introduction ; 2 The existence theorem for the continuum and the atomistic models ; 3 Local quasicontinuum method ; 4 Estimate of

e(QC)   ; References

The Artificial Boundary Method-Numerical Solutions of Partial Differential Equations on Unbounded Domains

1 Introduction   ; 2 Two typical problems
; 3 The global (nonlocal) artificial boundary conditions
; 4 Local boundary conditions   ; 5 Discrete artificial boundary conditions
6 Implicit boundary conditions   7 Conclusions
; References   ; Optimal order integration on the sphere
; 1 Introduction   ; 2 Extremal fundamental systems versus product rules   ; 3 Optimal order estimates for cubature in Sobolev spaces
; 4 Numerical example   ; References

A Survey of Multi-symplectic Runge-Kutta Type Methods for Hamiltonian Partial Differential Equations

1 Introduction   ; 2 Multi-symplecticity of Runge-Kutta type methods for the general Hamiltonian partial differential equations
3 Multi-symplectic Runge-Kutta type methods for Schrodinger equations

Sommario/riassunto	This collection of articles covers the hottest topics in contemporary applied mathematics. Multiscale modeling, material computing, symplectic methods, parallel computing, mathematical biology, applied differential equations and engineering computing problems are all included. The book contains the latest results of many leading scientists and provides a window on new trends in research in the field. <i>Sample Chapter(s)</i> Chapter 1: An Iterative BEM for the Inverse Problem of Detecting Corrosion in a Pipe (467 KB) <i>Contents:</i> An Iterative BEM for the Inverse Problem