

Contents

ICIAM Congresses	ix
ICIAM Prize Winners	xi
Organization of the Congress	xiii
List of Sponsors	xxi
Opening Ceremony	xxxii
Presentation of the ICIAM Prizes by Ian Sloan, Chair of the Prize Committee	xxxvii

Invited Lectures

Grégoire Allaire, François Jouve and Nicolas Van Goethem

A level set method for the numerical simulation of damage evolution	3
---	---

Christian Ebenbauer, Tobias Raff and Frank Allgöwer

Dissipation inequalities in systems theory: An introduction and recent results	23
---	----

Luis A. Caffarelli

Some nonlinear problems involving non-local diffusions	43
--	----

Claudio Canuto

High-order methods for PDEs: Recent advances and new perspectives ...	57
---	----

Margaret Cheney

Radar imaging	89
---------------------	----

Albert Cohen

Adaptive approximations by greedy algorithms	99
--	----

Weinan E

Multiscale analysis of density functional theory	133
--	-----

Michel Fortin, Carl Robitaille, André Fortin and Ali Rezgui

Frictional contact in solid mechanics	131
---	-----

<i>Roland Glowinski</i>	
Numerical methods for fully nonlinear elliptic equations	155
<i>Hitoshi Ishii</i>	
Asymptotic solutions of Hamilton–Jacobi equations for large time and related topics	193
<i>Barbara Lee Keyfitz</i>	
Hyperbolic conservation laws. Past and future	219
<i>Robert V. Kohn and Sylvia Serfaty</i>	
Second-order PDE’s and deterministic games	239
<i>Tatsien Li</i>	
Controllability and observability: From ODEs to quasilinear hyperbolic systems	251
<i>José Mario Martínez</i>	
Order-value optimization and new applications	279
<i>Christof Schütte, Frank Noe, Eike Meerbach, Philipp Metzner and Carsten Hartmann</i>	
Conformation dynamics	297
<i>Alexandros Beskos and Andrew Stuart</i>	
MCMC methods for sampling function space	337
<i>Ichiro Tsuda</i>	
Chaotic itinerancy reality in the dynamic brain – episodic memory formation	365
<i>Gunther Uhlmann</i>	
Visibility and invisibility	381
<i>Jinchao Xu</i>	
Optimal algorithms for discretized partial differential equations	409
Euler Special Lecture	
<i>Walter Gautschi</i>	
Leonhard Euler: His life, the man, and his works	447