

Monday, June 27, 2011

<b>Opening Ceremony</b>	09:00~09:20 Room A
Chair: Shao-liang ZHANG	
○ Opening talk by the president	
○ Some remarks	

<b>27-1-A SIAM Key Note Speaker</b>	09:30~10:30 Room A
Chair: Hisashi OKAMOTO	
○ Mitchell Luskin : Atomistic-to-Continuum Coupling Methods ..... p.24	

<b>27-2-A(1) Invited Speaker</b>	10:40~11:20 Room A
Chair: I-Liang Chern	
○ Wen-Hann Sheu : On a symplectic scheme that optimizes the dispersion-relation equation of the Maxwell's equations ..... p.26	

<b>27-2-A(2) Invited Speaker</b>	11:20~12:00 Room A
Chair: Xiao-qing Jin	
○ HUI JI : Sparsity-based regularizations for image restoration ..... p.27	

27-3-A Student prize winner presentations		13:20~15:20 Room A
		Chair: Dongwoo Sheen
○ Yongyong Cai, Weizhu Bao and Hanquan Wang : Efficient numerical methods for computing ground states and dynamics of dipolar Bose-Einstein condensates .....		p.28
○ Lei Du, Tomohiro Sogabe and Shao-Liang Zhang : A variant of the IDR(s) method with quasi-minimal residual strategy .....		p.30
○ Chiun-Chang Lee : Limit Problems of Solutions for the Coupled Nonlinear Schrödinger Equations and Steady-state Solutions of the Poisson-Nernst-Planck Systems .....		p.32
○ Akitoshi Takayasu and Shin'ichi Oishi : A method of computer assisted proof for nonlinear two-point boundary value problems using higher order finite elements .....		p.33

27-4-B Numerical Linear Algebra		15:40~17:40 Room B
		Chair: T. Miyata and K. Ozaki
○ Takafumi Miyata, Lei Du, Tomohiro SOGABE, Yusaku YAMAMOTO and Shao-Liang ZHANG : A Projection Approach to Complex Eigenvalues of a Specified Absolute Value		p.34
○ Takeshi Fukaya, Yusaku Yamamoto and Shao-Liang Zhang : Automatic Performance Tuning for the Blocked Householder QR Algorithm .....		p.36
○ Xiao-Qing Jin, Wei-ping Shen and Chong Li : A Ulm Method for Inverse Eigenvalue Problems .....		p.38
○ Yung-Ta Li : Folding a linear system to a second-order form and its application to structure preserving model order reduction .....		p.39
○ Roberd Saragih : Model reduction order of bilinear system using balanced singular perturbation .....		p.41
○ Katsuhisa Ozaki, Takeshi Ogita and Shin'ichi Oishi : Simplified semi-static floating-point filter for 2D orientation Problem .....		p.42

## 27-4-C Mathematical Analysis

15:40~17:40 Room C

Chair: C-A Wang and C-H. Cho

- Ching-An Wang and Un-Un Kuo : On the existence of steady flows in a rectangular channel with slip effect on one porous wall ..... p.44
- Yukihiro Suzuki, Yukio Takemoto and Jiro Mizushima : Exchange of two modes of instability leading to sustained oscillations in the flow past a cylindrical obstacle .... p.47
- Chien-Hong Cho and Marcus Wunsch : Global and singular solutions to the generalized Proudman-Johnson equation ..... p.49
- Hendra Gunawan and Yoshihiro Sawano : Application of RKHS Theory to a Minimization Problem with Prescribed Nodes ..... p.51
- Kwok Kin Wong, Robert Conte and Tuen-Wai Ng : Exact meromorphic solutions of the real cubic Swift-Hohenberg equation ..... p.53

## 27-4-D Mathematics for Flow

15:40~17:40 Room D

Chair: L.H.Wiryanto and D. Victor

- Leo Hari Wiryanto : Free-surface flow under a sluice gate of an inclined wall from deep water ..... p.55
- Syakila Binti Ahmad, Ioan Pop and Kuppalapalle Vajravelu : Free Convection Boundary Layer Flow from a Vertical Cone in a Porous Medium Filled with a Nanofluid ..... p.56
- Victor Didenko and Johan Helsing : Features of the Nystroem Method for the Sherman-Lauricella Equation on Piecewise Smooth Contours ..... p.58
- Changtong Luo, Shao-Liang Zhang and Zonglin Jiang : A New Evolutionary Algorithm for Ground to Flight Data Correlation ..... p.60
- Swaroop Nandan Bora and Santu Das : Ocean wave scattering within or over a porous medium ..... p.62

Tuesday, June 28, 2011

28-1-A Invited Speaker

09:30~10:20 Room A

Chair: Hiroshi Kokubu

- Yasumasa Nishiura, Takeshi Watanabe and Makoto Iima : Spatially localized traveling structures and the asymptotic behavior in binary fluid convection ..... p.64

28-2-A(1) Invited Speaker

10:40~11:20 Room A

Chair: Hyung-Chun Lee

- Eun-Jae Park : Adaptive mixed FEM and new Discontinuous Galerkin methods ... p.66

28-2-A(2) Invited Speaker

11:20~12:00 Room A

Chair: Mohd Omar

- Roslinda Mohd Nazar : Numerical investigation of mixed convection flow over a horizontal circular cylinder and a solid sphere in nanofluids ..... p.68

28-3-B Numerical Algorithm I	13:20~15:20 Room B
Chair: H.Yasuda and C.Luo	
○ Hidenori Yasuda : Lamellar pattern and two-phase shallow water equations . . . . .	p.70
○ Tanay Deshpande : Implementing the Finite Volume Method on a Rectangular Grid	p.72
○ Naoya Yamanaka, Masahide Kashiwagi and Shin'ichi Oishi : Accurate and Rigorous Exponential Algorithm in Round to Nearest . . . . .	p.73

28-3-C Phenomena, Model, Simulation I	13:20~15:20 Room C
Chair: Tomoeda and C. Mendoza	
○ Mohd Omar : An integrated manufacturing system for time-varying demand process	p.75
○ Takanori Katsura : Numerical analysis of a stationary transport equation by upwind scheme . . . . .	p.76
○ Akiyasu Tomoeda, Ryosuke Nishi, Kazumichi Ohtsuka and Katsuhiko Nishinari : Stable Traffic Jam Occurs from Nonlinear Saturation . . . . .	p.78
○ Carolina Mendoza and A.M. Mancho : Lagrangian Skeleton on the Gulf of Mexico Oil Spill . . . . .	p.80
○ Keita Iida, Hiroyuki Kitahata, Satoshi Nakata, Masaharu Nagayama, : Mathematical studies on the self-motion of surfactant scrapings at the air-water interface . . . . .	p.82
○ Hisashi Okamoto : A curious bifurcation diagram arising in a scalar reaction-diffusion equation with an integral constraint . . . . .	p.84

28-3-D Applied Mathematics I		13:20~15:20 Room D
Chair: K. Matsue and T. Mizuguchi		
○ Hiroshi Kokubu : Application of topological computation method for global dynamics of an associative memory model of the Hopfield type .....		p.85
○ Kaname Matsue : Rigorous verification of equilibria for evolutionary equations - Existence, Uniqueness and Hyperbolicity - .....		p.86
○ Tsuyoshi Mizuguchi, and Makoto Yomosa : Role of unstable symmetric solutions in symmetry restoring process .....		p.88
○ Edi Cahyono and Buyung Sarita : A Diffusion Equation Representing the Dynamics of the Jakarta Composite Index (JSX) .....		p.90
○ Buyung Sarita, Femy Puspita Arisanty and Edi Cahyono : The Trend and Probability Density Function of the Jakarta Composite Index (JSX) .....		p.91
○ Masataka Kuwamura : Dormancy of predators in prey-predator systems .....		p.92

28-4-B Numerical Algorithm II		15:40~17:40 Room B
Chair: M. Kimura and K. H. Kwon		
○ Masato Kimura and Kiyohiro Ishijima : Truncation error analysis for particle methods		p.94
○ Elliott Ginder, Seiro Omata and Karel Svadlenka : A numerical method for multiphase volume-preserving mean curvature flow .....		p.96
○ Min-Hung Chen and Rong-Jhao Wu : A High-Order Discontinuous Galerkin Method for Elliptic Interface Problems .....		p.98
○ Teng-Yao Kuo, Hsin-Chu Chen and Tzyy-Leng Horng : A Coarse-Grain Parallel Scheme for Solving Poisson Equation by Chebyshev Pseudospectral Method .....		p.99
○ Haiwei Sun and Qin Sheng : On the stability of an oscillation-free ADI method in laser beam propagation computations .....		p.101

28-4-C Phenomena, Model, Simulation II

15:40~17:40 Room C

Chair: H. Suito and S.R. Pudjaprasetya

- Hiroshi Suito, Takuya Ueda and Daniel Sze : Flows in thoracic aorta with torsion **p.103**
- Alex Chang : A Pore-scale Network Flow Model for Two Phase Flow: The Genesis and Migration of Gas Phase .....**p.105**
- Santiago Madruga and Santiago Madruga : Convective transport and stability in films of binary mixtures ..... **p.106**
- Sri Redjeki Pudjaprasetya, and Elis Khatizah : Longshore Wave Breaker with Reflected Beach ..... **p.108**
- Ikha Magdalena and S.R. Pudjaprasetya : Wave Energy Dissipation in Porous Media **p.110**
- G Sharma and Madhu Jain : Multi-Compartment Modeling of Tumor Cells Interacting With Dynamic Chemotherapeutic Drug .....**p.112**

28-4-D Applied Mathematics II & Networks

15:40~17:40 Room D

Chair: K. Miura and W-K Ching

- Matthew Min-Hsiung Lin : On LaSalle's Invariance Principle and Its Application to Synchronize Hyperchaotic Systems .....**p.113**
- Keiji Miura : An unbiased estimator of noise correlations under signal drift .....**p.115**
- Wai-Ki CHING : Construction of Probabilistic Boolean Networks: A Maximum Entropy Rate Approach ..... **p.117**
- Inseok Yang, Donggil Kim and Dongik Lee : Compensation Technique for Transmission Delay and Packet Loss in Networked Control System based on Lagrange Interpolation **p.119**

Wednesday, June 29, 2011

29-1-A SIAM Key Note Speaker	09:30~10:30	Room A
Chair: Ming-Chih Lai		
◦ Andrea Bertozzi : Mathematics of Crime .....		p.121

29-2-B Numerical Algorithms III	10:40~12:00	Room B
Chair: T. Ichinomiya and C-T. Wu		
◦ David Ni : Numerical Studies of Lorentz Transformation .....		p.122
◦ Chin-Tien Wu, Ming-Chiang Jiang and Yu-Lin Tsai : Numerical Studies on Monge Ampere Equation Arising from Free-Form Design of Geometric Optics .....		p.124
◦ Takashi Ichinomiya : Renormalization approach to solve Langevin's equation .....		p.126
◦ Kil H Kwon and Lee Jaekyu : Consistent approximation-sampling with multi pre and post filtering .....		p.128

29-2-C Error Analysis	10:40~12:00	Room C
Chair: K. Kobayashi and T. Kinoshita		
◦ Yintzer Shih and R. Bruce Kellogg : A Tailored Finite Point Method for Convection Diffusion Reaction Problems with Variable Coefficients .....		p.130
◦ Kenta Kobayashi : On the interpolation constants over triangular elements .....		p.131
◦ Takehiko Kinoshita, T. Kimura and M.T. Nakao : A posteriori estimates of inverse linear ordinary differential operators .....		p.132
◦ Xuefeng LIU , Akitoshi Takayasu and Shin'ichi Oishi : Numerical verification for solution existence of elliptic PDE on arbitrary polygonal domain .....		p.133

## 29-2-D Applied Mathematics III

10:40~12:00 Room D

Chair: C. Y. Han and K.K. Viswanathan

○ Naoki Wada : Reconstruction of the density of tree-shaped networks from boundary measurements of waves ..... p.135

○ Chang Yong Han and Song-Hwa Kwon : Cubic helical splines with Frenet-frame continuity p.137

○ Viswanathan Kodakkal Kannan, Zainal Abdul Aziz and Saira Javed : Free vibration of symmetric angle-ply laminated cylindrical shells of variable thickness including shear deformation theory: spline method ..... p.139

## 29-3-B Bifurcation

13:20~15:20 Room B

Chair: T. Sakajo and M. Shoji

○ Takashi Sakajo : Point vortex equilibria enhancing forces over two parallel plates . p.141

○ Tomoyuki Miyaji, Isamu Ohnishi and Yoshio Tsutsumi : Bifurcation analysis for the Lugiato-Lefever equation in a square ..... p.143

○ Kuo-Chih Hung and Shin-Hwa Wang : A theorem on S-shaped bifurcation curve for a positone problem with convex-concave nonlinearity and its applications to the perturbed Gelfand problem ..... p.145

○ Shin-Hwa Wang, Kuo-Chih Hung and Chien-Shang Yu : On the existence of a double S-shaped bifurcation curve with six solutions for a combustion problem ..... p.146

○ Mayumi Shoji and Chika Shimizu : Appearance and disappearance of non-symmetric progressive capillary-gravity waves of deep water ..... p.148

○ Takeshi WATANABE, Makoto IIMA and Yasumasa NISHIURA : Bifurcation structure and spontaneous pattern formation in binary fluid convection ..... p.150

29-3-C Optimization I		13:20~15:20	Room C
		Chair: W.J.Leong and W-H Kuo	
○ Wen-Hung Kuo : Single-machine group scheduling problems with time-dependent learning effect and position-based setup time learning effect .....			p.152
○ Seyoung Park, Bong-Gyu Jang and Yuna Rhee : Optimal Retirement with Unemployment Risks and Market Completion .....			p.154
○ Wah June Leong, Mahboubeh Farid and Malik Abu Hassan : Rescaled Gradient-based Methods with Fixed Stepsize for Large-scale Optimization .....			p.156

29-3-D Numerical Analysis I		13:20~15:20	Room D
		Chair: T. Ishiwata and H. Notsu	
○ Tetsuya Ishiwata : Behavior of polygonal curves by crystalline curvature flow with a driving force .....			p.157
○ Guanyu Zhou and Norikazu Saito : Some remarks on the fictitious domain method with penalty for elliptic problems .....			p.159
○ Norikazu Saito : Analysis of the finite volume approximation for a degenerate parabolic equation .....			p.161
○ Takahito Kashiwabara : FEM analysis of the Stokes equations under boundary conditions of friction type .....			p.163
○ Hirofumi Notsu, Masahiro Yamaguchi and Daishin Ueyama : A mesh generator using a self-replicating system .....			p.165

29-4-B Accurate and High Performance Computing		15:40~17:40	Room B
		Chair: H. Fujiwara and D. Sheen	
○ Hiroshi Fujiwara : A Remark on Numerical Instability of Complex Inverse Laplace Transforms using Multiple-Precision Arithmetic .....			p.167
○ Dongwoo Sheen and Jiwoon Kim : Numerical Laplace inversion using multi-precision			p.169
○ Chenhan Yu, Weichung Wang and Dan'l Pierce : CPU-GPU Hybrid Approaches in Multifrontal Methods for Large and Sparse Linear System .....			p.170
○ Shugo Manabe : Design and implementation of a multiple-precision system on GPU			p.172

29-4-C Optimization II		15:40~17:40	Room C
		Chair: G. M. Lee and M. Jain	
○ Gue Myung Lee : On Optimality Theorems for Robust Multiobjective Optimization problems .....			p.174
○ Sangho Kum and Yongdo Lim : The Resolvent average on symmetric cones .....			p.176
○ Dai-Ni Hsieh, Ray-Bing Chen, Ying Hung and Weichung Wang : Optimizing Latin Hypercube Designs by Particle Swarm with GPU Acceleration .....			p.178
○ Madhu Jain : Maximum Entropy Approach For Optimal Repairable Mx/G/1 Queue With Bernoulli Feedback And Setup .....			p.180
○ Afshin Ghanbarzadeh and Abbas : Application of the Bees Algorithm to Multi-Objective Optimization Engineering Problems .....			p.181

Chair: C. Park and S-M. Chang
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○ Chunjae Park and Dongwoo Sheen : A quadrilateral Morley element for biharmonic equations .....p.183

○ Shu-Ming Chang : Applying Snapback Repellers in Ecology .....p.185

○ Yusuke Morikura, Katsuhisa Ozaki and Shin'ichi Oishi : Verified solutions of linear systems on GPU .....p.186