# EASIAM2011 Program

**June 27th**

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<tr>
<th><strong>Opening Ceremony (09:00~09:20)</strong></th>
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<tr>
<td>□ Opening talk by the president</td>
<td>Chair: Shao-Liang ZHANG</td>
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<td>□ Some remarks</td>
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<tr>
<th><strong>SIAM Key Note Speaker (09:30~10:30)</strong></th>
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<tr>
<td>□ Mitchell Luskin: Atomistic-to-Continuum Coupling Methods</td>
<td>Chair: Hisashi OKAMOTO</td>
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<tr>
<th><strong>Invited Speaker (10:40~11:20)</strong></th>
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<tr>
<td>□ Tony Wen-Hann Sheu: On a symplectic scheme that optimizes the dispersion-relation equation of the Maxwell's equations</td>
<td>Chair: I-Liang Chern</td>
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<td>□ Ji Hui: Sparsity-based regularizations for image restoration</td>
<td>Chair: Xiao-qing Jin</td>
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<th><strong>Student prize winner presentations (13:20~15:20)</strong></th>
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<tr>
<td>□ Yongyong Cai, Efficient numerical methods for computing ground states and dynamics of dipolar Bose-Einstein condensates</td>
<td>Chair: Dongwoo Sheen</td>
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<td>□ Lei Du, A variant of the IDR(s) method with quasi-minimal residual strategy</td>
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<td>□ Chiun-Chang Lee, Limit Problems of Solutions for the Coupled Nonlinear Schrödinger Equations and Steady-state Solutions of the Poisson-Nernst-Planck Systems</td>
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<td>□ Akitoshi Takayasu, A method of computer assisted proof for nonlinear two-point boundary value problems using higher order finite elements</td>
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### Numerical Linear Algebra (15:40~17:40)  
**Room A**

- 146 Takafumi MIYATA, Lei DU, Tomohiro SOGABE, Yusaku YAMAMOTO, Shao-Liang ZHANG: A Projection Approach to Complex Eigenvalues of a Specified Absolute Value
- 148 Takeshi FUKAYA, Yusaku YAMAMOTO, Shao-Liang ZHANG: Automatic Performance Tuning for the Blocked Householder QR Algorithm
- 134 Xiao-qing Jin, Wei-ping Shen, Chong Li: A Ulm-like Method for Inverse Eigenvalue Problems
- 080 Yung-Ta Li: Folding a linear system to a second-order form and its application to structure preserving model order reduction
- 006 Roberd Saragih: Model Order Reduction for Bilinear System using Balanced Singular Perturbation
- 003 Katsuhisa Ozaki, Takeshi Ogita, Shin'ichi Oishi: Simplified semi-static floating-point filter for 2D orientation problem

### Mathematical Analysis (15:40~17:40)  
**Room B**

- 054 Un-Un Kuo, Ching-An Wang: On the existence of steady flows in a rectangular channel with slip effect on one porous wall
- 062 Yukihito Suzuki, Yukio Takemoto, Jiro Mizushima: Exchange of two modes of instability leading to sustained oscillations in the flow past a cylindrical obstacle
- 122 Chien-Hong Cho, Marcus Wunsch: Global and singular solutions to the generalized Proudman-Johnson equation
- 021 Hendra GUNAWAN, Yoshihiro SAWANO: Application of RKHS Theory to a Minimization Problem with Prescribed Nodes
- 047 Robert Conte, Tuen-Wai Ng, Kwok-Kin Wong: Exact meromorphic solutions of the real cubic Swift-Hohenberg equation
- 004 Buyang Li, Weiwei Sun: Global existence of weak solution for nonisothermal multi-component flow

### Mathematics for Flow & Others (15:40~17:20)  
**Room C**

- 012 L.H. Wiryanto: Free-surface flow under a sluice gate of an inclined wall from deep water
- 112 S. Ahmad, I. Pop, K. Vajravelu: Free Convection Boundary Layer Flow from a VerticalCone in a Porous Medium Filled with a Nanofluid
- 118 Carlos Martel, Juan A. Mart: Nonlinear streak development in a flat plate boundary layer
- 014 Didenko Victor, Helsing Johan: Features of the Nyström Method for the Sherman-Lauricella Equation on Piecewise Smooth Contours
- 019 Swaroop Nandan Bora, Santu Das: Ocean wave scattering within or over a porous medium
June 28th

**Invited Speaker (09:30～10:20)**  
Room A  
Chair: Hiroshi Kokubu  
- Yasumasa Nishiura : Spatially localized traveling structures and the asymptotic behavior in binary fluid convection

**Invited Speaker (10:40～11:20)**  
Room A  
Chair: Hyung-Chun Lee  
- Eun-Jae Park : Adaptive mixed FEM and new Discontinuous Galerkin methods

**Invited Speaker (11:20～12:00)**  
Room A  
Chair: Mohd Omar  
- Roslinda Nazar : Numerical investigation of mixed convection flow over a horizontal circular cylinder and a solid sphere in nanofluids
### Numerical Algorithm I (13:20~15:00)  Room A

- 061 Hidenori Yasuda: Lamellar pattern and two-phase shallow water equations
- 085 Changtong Luo, Shao-Liang Zhang, Zonglin Jiang: A New Evolutionary Algorithm for Ground to Flight Data Correlation
- 052 Weizhu Bao, Yongyong Cai, Hanquan Wang: Efficient numerical methods for computing ground states and dynamics of dipolar Bose-Einstein condensates
- 034 Amin NAM, Wong BR: Reflection-free Numerical Scattering Solutions of the Time-Dependent Schrödinger Equation
- 142 Tanay Milind Deshpande: IMPLEMENTING THE FINITE VOLUME METHOD ON A RECTANGULAR GRID

### Phenomena, Model, Simulation I (13:20~15:20)  Room B

- 018 M.Omar: An integrated manufacturing system for time-varying demand process
- 037 Takanori Katsura: Numerical analysis of a stationary transport equation by upwind scheme
- 110 Akiyasu Tomoeda, Ryosuke Nishi, Kazumichi Ohtsuka, Katsuhiko Nishinari: Stable Traffic Jam Occurs from Nonlinear Saturation
- 096 C. Mendoza, A.M. Mancho: Lagrangian Skeleton on the Gulf of Mexico Oil Spill
- 132 Keita Iida, Hiroyuki Kitahata, Satoshi Nakata, Masaharu Nagayama: Mathematical studies on the self-motion of surfactant scrapings at the air-water interface
- 007 Hisashi OKAMOTO: A curious bifurcation diagram arising in a scalar reaction-diffusion equation with an integral constraint

### Applied Mathematics I (13:20~15:20)  Room C

- 129 Hiroshi Kokubu: Application of topological computation method for global dynamics of an associative memory model of the Hopfield type
- 131 Kaname Matsue: Rigorous verification of equilibria for evolutionary equations - Existence, Uniqueness and Hyperbolicity -
- 058 Tsuyoshi Mizuguchi, Makoto Yomosa: Role of unstable symmetric solutions in symmetry restoring process
- 123 Edi Cahyono, Buyung Sarita: A Diffusion Equation Representing the Dynamics of the Jakarta Composite Index (JSX)
- 125 Buyung Sarita, Femy Puspita Arisanty, Edi Cahyono: The Trend and Probability Density Function of the Jakarta Composite Index (JSX)
- 023 Masataka Kuwamura: Dormancy of predators in prey-predator systems
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<th><strong>Numerical Algorithms II (15:40～17:40)</strong></th>
<th><strong>Room A</strong></th>
<th><strong>Chair:</strong> M. Kimura and K. H. Kwon</th>
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<td>□ 140 Masato Kimura, Kiyohiro Ishijima : Truncation error analysis for particle methods</td>
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<td>□ 130 Elliott Ginder, Seiro Omata, Karel Svadlenka : A numerical method for multiphase volume-preserving mean curvature flow</td>
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<td>□ 100 Min-Hung Chen, Rong-Jhao Wu : A High-Order Discontinuous Galerkin Method for Elliptic Interface Problems</td>
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<td>□ 041 Teng-Yao Kuo, Hsin-Chu Chen, Tzuy-Leng Horng : A Coarse-Grain Parallel Scheme for Solving Poisson Equation by Chebyshev Pseudospectral Method</td>
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<td>□ 075 Srinivasan Natesan, S. Gowrisankar : Robust Computational Method for Singularity Perturbed Parabolic Initial-Boundary-Value on Adaptive Grid</td>
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<td>□ 137 Qin Sheng, Hai-Wei Sun : On the stability of an oscillation-free ADI method in laser beam propagation computations</td>
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<th><strong>Phenomena, Model, Simulation II (15:40～17:40)</strong></th>
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<th><strong>Chair:</strong> H. Suito and S.R. Pudjaprasetya</th>
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<td>□ 117 Hiroshi Suito, Takuya Ueda, Daniel Sze : Flows in thoracic aorta with torsion</td>
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<td>□ 049 Koukung Alex Chang : A Pore-scale Network Flow Model for Two Phase Flow: The Genesis and Migration of Gas Phase</td>
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<td>□ 076 Santiago Madruga, Fathi Bribesh, Uwe Thiele : Convective transport and stability in films of binary mixtures</td>
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<td>□ 029 S.R. Pudjaprasetya, F.P.H. van Beckum, Elis Khatizah : Longshore Wave Breaker with Reflected Beach</td>
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<td>□ 095 Ikha Magdalena, S.R. Pudjaprasetya : Wave Energy Dissipation in Porous Media</td>
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<td>□ 078 Madhu Jain, G. C. Sharma : Multi-Compartment Modeling of Tumor Cells Interacting With Dynamic Chemotherapeutic Drug</td>
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<th><strong>Applied Mathematics II (15:40～16:40)</strong></th>
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<th><strong>Chair:</strong> C-Y. Hsu and K. Miura</th>
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<tr>
<td>□ 057 Matthew Min-Hsiung Lin : On LaSalle's Invariance Principle and Its Application to Synchronize Hyperchaotic Systems</td>
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<td>□ 048 Chih-Yu Hsu, Huang-Nan Huang, Shuo-Tsung Chen : Digital Image Watermarking using Wavelet-Based Entropy</td>
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<td>□ 082 Keiji Miura : An unbiased estimator of noise correlations under signal drift</td>
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<th><strong>Networks (16:40～17:40)</strong></th>
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<th><strong>Chair:</strong> W-K Ching and N. H. Moin</th>
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<td>□ 138 Wai-Ki Ching : Construction of Probabilistic Boolean Networks: A Maximum Entropy Rate Approach</td>
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<td>□ 115 Inseok Yang, Donggil Kim, Dongik Lee : Compensation Technique for Transmission Delay and Packet Loss in Networked Control System based on Lagrange Interpolation</td>
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<td>□ 106 Noor Hasnah Moin : Hybrid Genetic Algorithms for Inventory Routing Problems with Time Varying Demand</td>
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### June 29th

#### SIAM Key Note Speaker (09:30~10:30)
**Room A**
Chair: Ming-Chih Lai
- Andrea Bertozzi: Mathematics of Crime

#### Numerical Algorithms III (10:40~12:00)
**Room A**
Chair: T. Ichinomiya and C-T. Wu
- 017 David C. Ni: Numerical Studies of Lorentz Transformation
- 043 Yu-Lin Tsai, Ming-Chiang Jiang, Chin-Tien Wu: Numerical studies on the Monge-Ampere equation arising from free-form design of geometric optics
- 070 Takashi Ichinomiya: Renormalization approach to solve Langevin's equations
- 102 Kil Hyun Kwon, Jaekyu Lee: Consistent approximation-sampling with multi pre and post filtering

#### Error Analysis (10:40~12:00)
**Room B**
Chair: K. Kobayashi and T. Kinoshita
- 030 Yintzer Shih, R. Bruce Kellogg: A Tailored Finite Point Method for Convection Diffusion Reaction Problems with Variable Coefficients
- 038 Kenta Kobayashi: On the interpolation constants over triangular elements
- 103 T. Kinoshita, T. Kimura, M.T. Nakao: A posteriori estimates of inverse linear ordinary differential operators
- 002 Akitoshi Takayasu, Xuefeng Liu, Shin'ichi Oishi: Numerical verification for solution existence of semilinear elliptic partial differential equation on arbitrary polygonal domain

#### Applied Mathematics III (10:40~11:40)
**Room C**
Chair: C. Y. Han and K.K. Viswanathan
- 086 WADA Naoki: Reconstruction of the density of tree-shaped networks from boundary measurements of waves
- 108 Chang Yong Han, Song-Hwa Kwon: Cubic helical splines with Frenet-frame continuity
- 022 K.K. Viswanathan, Zainal Abdul Aziz, Saira Javed: Free vibration of symmetric angle-ply laminated cylindrical shells of variable thickness including shear deformation theory: spline method
### Bifurcation (13:20～15:20)

**Room A**  
Chair: T. Sakajo and M. Shoji  

- 050 Takashi Sakajo: Point vortex equilibria enhancing forces over two parallel plates  
- 024 Tomoyuki Miyaji, Isamu Ohnishi, Yoshio Tsutsumi: Bifurcation analysis for the Lugliato-Lefever equation in a square  
- 042 Kuo-Chih Hung, 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  
- 053 Kuo-Chih Hung, Shin-Hwa Wang, Chien-Shang Yu: On the existence of a double S-shaped bifurcation curve with six solutions  
- 055 Mayumi SHOJI, Chika SHIMIZU: Appearance and Disappearance of Non-symmetric Progressive Waves of Deep Water  
- 094 Takeshi WATANABE, Makoto IIMA, Yasumasa NISHIURA: Bifurcation structure and spontaneous pattern formation in binary fluid convection

### Optimization I (13:20～15:00)

**Room B**  
Chair: P. Yam and W-H Kuo  

- 113 Donggil Kim, Inseok Yang, Dongik Lee: Reconfigurable PID Controller Design using Internal Model Control  
- 059 Wen-Hung Kuo: Single-machine group scheduling problems with time-dependent learning effect and position-based setup time learning effect  
- 155 A. Bensoussan, K. C. J. Sung, S. C. P. Yam, S. P. Yung: Linear Quadratic Mean Field Games  
- 147 Bong-Gyu Jang, Seyoung Park, Yuna Rhee: Optimal Retirement with Unemployment Risks and Market Completion  
- 136 Wah June Leong, Mahboubeh Farid, Malik Abu Hassan: Rescaled Gradient-based Methods with Fixed Stepsize for Large-scale Optimization

### Numerical Analysis I (13:20～15:00)

**Room C**  
Chair: T. Ishiwata and H. Notsu  

- 114 Tetsuya Ishiwata: Behavior of polygonal curves by crystalline curvature flow with a driving force  
- 093 Guanyu ZHOU, Norikazu SAITO: Some remarks on the fictitious domain method with penalty for elliptic problems  
- 056 Norikazu SAITO: Analysis of the finite volume approximation for a degenerate parabolic equation  
- 092 Takahito Kashiwabara: FEM analysis of the Stokes equations under boundary conditions of friction type  
- 104 Hirofumi NOTSU, Masahiro YAMAGUCHI, Daishin UEYAMA: A mesh generator using a self-replicating system
### Accurate and High Performance Computing (15:40~17:40) Room A
Chair: H. Fujiwara and N. Yamanaka

- 111 Hiroshi FUJIWARA: A Remark on Numerical Instability of Complex Inverse Laplace Transforms using Multiple-Precision Arithmetic
- 133 Jiwoon Kim, Dongwoo Sheen: Numerical Laplace inversion using multi-precision
- 128 Naoya Yamanaka, Masahide Kashiwagi, Shin’ichi Oishi: Accurate and Rigorous Exponential Algorithm in Round to Nearest
- 105 Chenhan D. Yu, Weichung Wang, Dan’l Pierce: CPU-GPU Hybrid Approaches in Multifrontal Methods for Large and Sparse Linear System
- 119 Shugo Manabe: Design and implementation of a multiple-precision system on GPU
- 149 Yusuke Morikura, Katsuhisa Ozaki, Shin'ichi Oishi: Verified solutions of linear systems on GPU

### Optimization II (15:40~17:20) Room B
Chair: G. M. Lee and M. Jain

- 152 A. Ghanbarzadeh, A. Moradi, A. Mirzakhani Nafchi: Application of the Bees Algorithm to Multi-Objective Optimization Engineering Problems
- 154 Gue Myung Lee: On Optimality Theorems for Robust Multiobjective Optimization Problems
- 151 Sangho Kum, Yongdo Lim: The Resolvent average on symmetric cones
- 089 Dai-Ni Hsieh, Ray-Bing Chen, Ying Hung, Weichung Wang: Optimizing Latin Hypercube Designs by Particle Swarm with GPU Acceleration
- 079 M. Jain: Maximum Entropy Approach For Optimal Repairable Mx/G/1 Queue With Bernoulli Feedback And Setup

### Numerical Analysis II (15:40~16:40) Room C
Chair: C. Park and S-M. Chang

- 116 Janpou Nee, Larn-Ying Yeh: The Behavior of the Solution of Brusselator Equation
- 153 Chunjae Park, Dongwoo Sheen: A quadrilateral Morley element for biharmonic equations
- 009 Shu-Ming Chang: Applying Snapback Repellers in Ecology