

The NIMS 2008 Conference & The 4th East Asia SIAM Conference

October 10-12 2008
National Institute for Mathematical Sciences (NIMS)
Hotel Riviera, Daejeon, Korea

October 10, Friday Morning

08:00 – 08:50	Registration	
08:50 – 09:00	Opening Ceremony: Hyung-Chun Lee & Tao Tang	
	Chair : Dongwoo Sheen	
09:00 – 09:50	SIAM Keynote Speakers I: Douglas Arnold	
09:50 – 10:00	Break	
	Session I (Chair: Abd Rahni Mt Piah)	Session II (Chair : Shinichi Oishi)
10:00 – 10:40	Ya Yan Lu Computing Dirichlet-to-Neumann Maps for Numerical Simulation of Photonic Crystal Structures	Victor Didenko Fredholm Properties of Operators Arising in Spline-Approximation Methods for Integral Equations with Conjugation
10:40 – 11:20	Shao-Liang Zhang Numerical Algorithms for Solving Shifted Complex Symmetric Linear Systems	Hai-wei Sun A High Order Compact Scheme for the Problem from Option Pricing with Jump
11:20 – 12:00	M. Omar A Production and Repair Model with Time-Varying Demand	Xiao-Qing Jin A Family of Generating Functions with Its Application in Pricing Options
12:00 – 14:00	Lunch	

October 10, Friday Afternoon

	Session I (Chair: Shao-Liang Zhang)	Session II (Chair: Xiao-Qing Jin)
14:00 – 14:25	Takeshi Ogita High Precision and Efficient Computation of Sparse Matrix-Vector Product	Hyoseop Lee Laplace transform method for the Black-Scholes equation
14:25– 14:50	Katsuhisa Ozaki A Robust Algorithm for Geometric Predicate by Sum of Determinants	Sheon-Young Kang An Integral equation method for the inverse problems of string vibration
14:50 – 15:15	Tan Wang On Decrease of Condition Number of Coefficient Matrices in the Cyclic Reduction for Linear Systems	Sungkwon Kang An inverse problem for the Helmholtz equation
15:15 – 15:30	Break	
	EASIAM Student Paper Competition (Chair: Tao Tang)	
15:30 – 15:50	Takafumi Miyata An Efficient Parallelization of the QR Algorithm for the Symmetric Tridiagonal Eigenproblems	
15:50 – 16:10	Naoya Yamanaka Fast Verified Automatic Integration Algorithm Over Finite Interval	
16:10 – 16:30	Ho-Seok Lee A first-passage-time model under regime-switching market environment	
16:30 – 16:50	Ying-Ying Zhang A Family of Generating Functions with An Application in Finance	
16:50 – 17:10	Byung Hwa Lim Optimal Investment, Consumption and Retirement Decision with Disutility and Liquidity Constraints	
17:10 – 17:20	Break	
	EASIAM Student Paper Competition (Chair: Dongwoo Sheen)	
17:20 – 17:40	Zuliang Lu A Posteriori Error Analysis of Triangular Mixed Finite Element Methods for Semilinear Quadratic Optimal Control Problems	
17:40 – 18:00	Takehiko Kinoshita On the L^2 a Priori Error Estimates to the Finite Element Solution of Elliptic Problems with Singular Adjoint Operator	
18:00 – 18:10	Photo Time	
18:10 – 20:00	Banquet	

October 11, Saturday Morning

08:00 – 09:00	Registration	
Chair: Hyung-Chun Lee		
09:00 – 09:50	SIAM Keynote Speakers I : Olof B. Widlund Domain Decomposition Theory for Less Regular Subdomains	
09:50 – 10:00	Break	
	Session I (Chair: Ya Yan Lu)	Session II (Chair: Byeong-Chun Shin)
10:00 – 10:40	Chang-Ock Lee Conductivity Imaging based on Harmonic Algorithms for Magnetic Resonance Electrical Impedance Tomography (MREIT)	Hisashi Okamoto Particle Trajectories Around a Running Cylinder in Brinkman's Porous-media Flow
10:40 – 11:20	Xue-Cheng Tai Graph Cuts for the Multiphase Mumford-Shah model Using Piecewise Constant Level Set	Ruo Li An Anisotropic Refinement Algorithm Based on Harmonic Mapping
11:20 – 12:00	Abd Rahni Mt Piah Rational Generalised Ball Functions for Monotonic Interpolating Curves	Mitsuhiro T. Nakao On the Constructive Error Estimates in the Finite Element Methods with Applications to the Numerical Verification of Solutions for Nonlinear PDEs
12:00 – 13:30	EASIAM Meeting & Lunch	

October 11, Saturday Afternoon

14:00 – 18:00	Tour
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October 12, Sunday Morning

	Session I (Chair: Jeonghwan Choi)	
09:00 – 09:40	Sangdong Kim Lower-order preconditioning for spectral element discretization to elliptic problems	
09:40 – 10:20	Dongwoo Sheen P_1 -nonconforming quadrilateral finite element for the Stokes problem	
10:20 – 11:00	Yongwimon Lenbury Modelling Delay Mechanisms in Human Physiology and Biology	
11:00 – 11:10	Break	
	Session I (Chair: Yongwimon Lenbury)	Session II (Chair: Shao-Liang Zhang)
11:10 – 11:35	Kalyan Das Analysis of Nutrient-Plant-Herbivore Recycling Model With Time Delay	Siming Huang Solving the Linear Operator Equation with Prior Information
11:35 – 12:00	Hidenori Yasuda Preparedness of the Influenza in the Commuter Towns of Tokyo; Analysis of Model Cities and a Metaphor Model	Christian Keil Verified Linear Programming and Extensions
12:00 – 12:25	Imbunm Kim Ratio-Dependent Predator-Prey Model with Diffusion	Shin'ichi Oishi Numerical Verification of Optimum Point in Linear Programming
12:25 – 14:00	Lunch	

	Session I (Chair: Victor Didenko)	Session II (Chair: Hisashi Okamoto)
14:00 – 14:25	Seung Yeal Ha A Simple Proof of the Cucker-Smale Flocking Dynamics and Mean-field Limit	Siegfried M. Rump Rigorous Error Bounds for Floating-Point Operations without Changing Rounding Mode
14:25– 14:50	Janpou Nee The Uniqueness and Existence of Chern-Simon Equation	Chien-Hong Cho On the Finite Difference Approximation for the Semilinear Wave Equation
14:50 – 15:15	Young-Sam Kwon Initial-Boundary Value Problems for Conservation Laws with Source Terms and the Degasperis-Procesi Equation	Huimin Jing SWE Model Based Simulation to Analyze the Cause of Pohang Harbor Hazard
15:15 – 15:30	Break	
October 10, Friday Afternoon continued		
	Session I (Chair: Taeyoung Ha)	Session II (Chair: Sangdong Kim)
15:30 – 15:55	Myoungnyoung Kim Verified Computations of Bifurcating Solutions for 3-dimensional Rayleigh-Bénard Convection Problems	Jae-Hong Pyo New Singular Function Method for Domain Singularities
15:55– 16:20	Chi-Ok Hwang New Directions of Statistical Physics in the Age of Computational Science: Yang-Lee Zero Phase Transition Approach for 2-D Triangular Antiferromagnets	Yuki Ueda A Set of Variant Hermite Elements for Dirichlet Boundary Problems and its Applications
16:20 – 16:45	Mohd Salmi Md Noorani Counting Closed Orbits of Hyperbolic Diffeomorphisms via Mertens Theorem	
16:45	Closing Remarks	