

KSIAM 2018 Spring Conference

KAIST
Daejeon, Korea
May 25-26, 2018

SCHEDULE

- ▶ **Opening Ceremony** : May 25, 13:00-13:20 [E11 203]
 - Jung, Eunok (President of KSIAM)
 - Kim, Sang Kyu (Dean, College of Natural Sciences, KAIST)
- ▶ **Invited Talks**
 - Sung, Hyung Jin (KAIST)
 - Title : Logarithmic Behavior of Wall-attached Structures in a Turbulent Boundary Layer
 - May 25, 13:20-14:10 [E11 203]
 - Hiroshi Kokubu (Kyoto University)
 - Title : Computer-assisted approach to the global dynamics of multi-parameter systems
 - May 25, 16:00-16:50 [E11 203]
 - Ha, Seung Yeal (Seoul National University)
 - Title : A panoramic view of the collective dynamics
 - May 26, 9:00-9:50 [E11 203]
- ▶ **Poster Session** : May 26, 10:00-10:40 [E11 1st floor]
- ▶ **KSIAM Young Researcher Paper Award** : May 25, 17:00-17:25 [E11 203]
- ▶ **KSIAM Journal Excellent Article Award** : May 25, 17:25-17:50 [E11 203]
- ▶ **Special Sessions**
 - Applications of Computational Structures - May 25, 14:20-15:40 [E11 203]
 - CJK-SIAM Joint Special Session: Mathematical Material Science I - May 25, 14:20-15:40 [E11 206]
 - CJK-SIAM Joint Special Session: Cryptology - May 25, 14:20-15:40 [E11 207]
 - Mathematical Biology I: Data analysis - May 25, 14:20-15:40 [E11 208]
 - MathWorks Special Session - May 25, 14:20-15:40 [E11 209]
 - Engineering Optimization Using CFD - May 26, 10:40-12:00 [E11 203]
 - CJK-SIAM Joint Special Session: Mathematical Material Science II - May 26, 10:40-12:00 [E11 206]
 - Applied Algebra and Geometry - May 26, 10:40-12:00 [E11 207]
 - Mathematical Biology II: Population dynamics - May 26, 10:40-12:00 [E11 208]
 - Stochastic Modeling and Analysis - May 26, 13:00-14:20 [E11 207]
 - Mathematical Modeling and Algorithms in Finance - May 26, 13:00-14:20 [E11 209]
- ▶ **General Sessions**
 - General Session I - May 26, 10:40-12:00 [E11 209]
 - General Session II - May 26, 13:00-14:20 [E11 203]
 - General Session III - May 26, 13:00-14:20 [E11 206]
 - General Session IV - May 26, 13:00-14:20 [E11 208]
- ▶ **Welcome Reception** : May 25, 18:00-21:00 [Faculty Club]

12:00-13:00	[E11 1st Floor]	Registration			
13:00-13:20	[E11 203]	Opening Ceremony Jung, Eunok (KSIAM) / Kim, Sang Kyu (Dean, College of Natural Sciences, KAIST)			Chair: Shin, SangJoon
13:20-14:10	[E11 203]	Invited Talk I			Chair: Ahn, Jaemyung
		Logarithmic Behavior of Wall-attached Structures in a Turbulent Boundary Layer Sung, Hyung-Jin (KAIST)			
14:10-14:20		Break			
	[E11 203]	[E11 206]	[E11 207]	[E11 208]	[E11 209]
	Special Session: Applications of Computational Structures	CJK-SIAM Joint Special Session: Mathematical Material Science I	CJK-SIAM Joint Special Session: Cryptology	Special Session: Mathematical Biology I - Data Analysis	Special Session: MathWorks
	Chair: Cho, Jin Yeon	Chair: Yasumasa Nishiura	Chair: Shim, Kyung-Ah	Chair: Lee, Jonggul	Chair: Eom, Jun-Sang
14:20-14:40	Introduction to MIDAS MESHFREE: An Analysis Solution for Designers Park, Jin Woo (MIDAS IT)	Synchronization of Kuramoto Oscillators Yinglong Zhang (Seoul Natl. University)	Efficient Algorithms for Isogeny Sequences and Their Cryptographic Applications Katsuyuki Takashima (ITC, Mitsubishi Electric, Japan)	IPK/PD/VD Modeling for Multi-drug Treatment on HCV Infection Shingo Iwami (Kyushu University)	Are scientists and engineers ready to use algorithms of AI and Deep learning in real-world problems? Ken Dunstan (MathWorks)
14:40-15:00	Parallel Computation for Three-Dimensional Static/Transient Analysis Based on FETI Methods Shin, SangJoon (Seoul Natl. University)	A hybrid numerical method for composite materials with local defects Pingbing MING (AMSS, CAS)	A New Algorithm for the Variants of Approximate Greatest Common Divisor Lee, Changmin (Seoul Natl. University)	Development of Quantitative Simulator of HTLV-1 Proviral Integration Sites Mitsuaki Takaki (Kyushu University)	From Alan Turing to MATLAB Today Eom, Jun-Sang (MathWorks)
15:00-15:20	Artificial Neural Network Applications for Structural Health Monitoring in Aircraft Landing Kim, JeongHo (Inha University)	The gradient flow structure of the Maxwell viscoelastic model and a structure-preserving finite element scheme Hirofumi Notsu (Kanazawa University)	Information-Theoretically Secure Multi-Party Computation with Minimal Interaction Maki Yoshida (NICT, Japan)	Beyond the Century of the Michaelis-Menten Equation Kim, Jae Kyoung (KAIST)	Unlocking the Power of Machine Learning Eom, Jun-Sang (MathWorks)
15:20-15:40	Multifield Variational Sectional Analysis for Accurate Stresses of Composite Beams Jung, Sung Nam (Konkuk University)	Computer Simulation of Phase Separation in Diblock Copolymers on Curved Surfaces Kim, Junseok (Korea University)	Introduction to McNie, a Code-based Public Key encryption Scheme Kim, Jon-Lark (Sogang University)	Large-scale RNA-Seq data analysis Lee, Dongsun (UNIST)	Classifying Trading Signals using Machine Learning and Deep Learning Eom, Jun-Sang (MathWorks)
15:40-16:00		Break			
16:00-16:50	[E11 203]	Invited Talk II			Chair: Lee, Chang-Ock
		Computer-assisted Approach to the Global Dynamics of Multi-parameter Systems Hiroshi Kokubu (Kyoto University)			
16:50-17:00	[E11 203]	Ceremony for Young Researcher Paper Award, KSIAM Journal Excellent Article Award			Chair: Yee, Kwanjung
17:00-17:25	[E11 203]	KSIAM Young Researcher Paper Award			Chair: Yee, Kwanjung
		Finite Difference Method for a Conservative Allen-Cahn Equation on Non-flat Surfaces Choi, Yongho (Korea University)			
17:25-17:50	[E11 203]	KSIAM Journal Excellent Article Award			Chair: Yee, Kwanjung
		Industrial Mathematics in Ultrasound Imaging Jang, Jaeseong (NIMS) / Ahn, Chi Young (NIMS)			
18:00	[Faculty Club]	Welcome Reception			

9:00-9:50	[E11 203]	Invited Talk III			Chair: Kim YongSam
	A panoramic view of the collective dynamics Ha, Seung Yeol (Seoul National University)				
9:50-10:00	Break				
10:00-10:40	[E11 1st floor]	Poster Session			
	<ol style="list-style-type: none"> 1. How can a failure in immune balance (Th17, Neutrophil, Tregs) lead to tumor invasion in lung cancer development : A Mathematical model / Lee, Donggu (Konkuk University) 2. Blow-up phenomena for a quasilinear parabolic equation with time-dependent coefficient source under homogeneous Neumann boundary condition / Rui Yang (Pusan National University) 3. Synergetic effect of bortezomib on oncolytic virus: signaling pathways / Lee, Jun Ho (Konkuk University) 4. Control Malaria through media Awareness: A Mathematical Modeling Approach/ Malik Muhammad Ibrahim (Pusan National University) 5. Spurious pressure in Scott-Vogelius/ Park, Chun Jae (Konkuk university, mathematics) 6. Analyzing sleep pattern of shift workers via Phillips-Chen-Robinson model (PCR model) / Hong, JaeHyung (KAIST) 7. Coexistence and pattern formations in the rock-paper-scissors game on the heterogeneous lattice system / Lim, Yeoncheol (UNIST) 8. Mathematical modeling for pacemaker-neuron-dependent molecular rhythm alteration by Drosophila clock mutant/ Jeong, EuiMin (KAIST) 9. Stability and Hopf bifurcation Analysis in the Fractional order predator-prey biological economic system with Holling type II functional response/ Lee, Seyeon (UNIST) 10. Network inference of circadian clock / Chae, Seokjoo (KAIST) 11. 코딩 수학 콘텐츠 연구 / kim sang kwon Korea University 12. Reconstruction of perturbations on a planar surface by using plasmonic resonances / Choi, Doo Sung (KAIST) 13. A High-order method for solving two-point boundary value problems of fractional differential equations/ Kim, Keon Ho (UNIST) 14. Korean Text Clustering With Syllable Vectors / Park, eonyoung (UNIST) 15. Explicite hybrid numerical algorithm for the efficient 3D volume reconstruction using a phase-field method / Kim, Hyundong (Korea University) 16. Phase-field simulation of Rayleigh Instability on a fibre / YANG, JUNXIANG (Korea University) 17. Quantifying Effects of Measurement Errors on Conductivity Image Reconstruction in Electrical Impedance Tomography / SUN, XIANG (Yonsei University) 18. Detection of Joinpoint Using Genetic Algorithm / Kim, Seongyoon (Yonsei University) 19. Convergence Tests for the Heat Equation and the Allen--Cahn Equation Lee, Chaeyoung (Korea University) 20. Some inequalities concerning the maximum modulus of a polynomial Sheikh Mohd Ibrahim (Pusan National University) 				
	[E11 203]	[E11 206]	[E11 207]	[E11 208]	[E11 209]
	Special Session: Engineering Optimization Using CFD	CJK-SIAM Joint Special Session: Mathematical Material Science II	Special Session: Applied Algebra and Geometry	Special Session: Mathematical Biology II - Population Dynamics	General Session I
	Chair: Yee, Kwanjung	Chair: Park, Jinhae	Chair: Han, Kangjin	Chair: Shingo Iwami	Chair: Kang, Myeongmin
10:40-11:00	Uncertainty-based Design Optimization of High Pressure Turbine Using CFD Lee, Sanga (Seoul Natl. University)	On the Cauchy-Born Approximation: at Finite Temperature and with Dilute Defects Zhijian YANG (Wuhan University)	Sums of Squares and Wavelet Frame Generator Cameron Farnsworth (Yonsei University)	Invasibility Threshold and Persistence of Bacterial Species Shinji Nakaoka (JST PRESTO)	A Finite Element Nonoverlapping Domain Decomposition Method with Lagrange Multipliers for the DUal Total Variation Minizations Park, Jongho (KAIST)
11:00-11:20	CFD-Based Estimation of Aircraft Dynamic Stability Derivatives Chung, Hyoung Seog (Republic of Korea Airforce Academy)	Time-asymptotic Interactions of Two Ensembles of Cucker-Smale Flocking Particles Ko, Dongnam (Seoul Natl. University)	Robot Workspace and semi-Algebraic Geometry Moon, Hyunsuk (KAIST)	The Probability of the End of the Ebola Virus Disease Epidemic with Sexual Transmission Lee, Hyojung (Hokkaido University)	Structure Tensor Total Variation and its Extension Cho, Junghee (Seoul Natl. University)
11:20-11:40	Analysis and Construction of Aerodynamic Database of 200kg Class Unmanned Rotorcraft Fuselage Using CFD Chae, Sanghyun (Korea Aerospace Research Institute)	Frustrated Nanoparticles and their Metamorphosis Yasumasa Nishiura (AIMR, Tohoku University, Japan)	Industrial problems of algebraic geometry and related topics Woo, Youngho (NIMS)	Gene Flow by Urbanization: Predictions on Population Structure of Aedes Aegypti Ryo Yamaguchi (Tokyo Metropolitan University)	Curvature-weighted Surface Simplification Algorithm using Vertex-based Geometric Features Choi, Han-Soo (Seoul Natl. University)
11:40-12:00	Aerodynamic Database Construction for Flight Dynamics Model of Low Subsonic Fixed-Wing VTOL UAV Febriyan Prayoga (Konkuk University)	Complex Role of NK Cells in Regulation of OV-Bortezomib Therapy Kim, Yangjin (Konkuk University)	Identifiability of symmetric tensors and singularity of secants of Veronese varieties Han, Kangjin (DGIST)	Mathematical Modeling of Infectious Diseases with Consideration of Public Health Policies Shim, Eunha (Soongsil University)	The Sparse Representation Model for Image Deblurring under Random Valued Impulse Noise Kang, Myeongmin (Seoul Natl. University)

12:00-12:10	[E11 203] Ceremony for Best Poster Award					Chair: Jeon, Kiwan
12:10-13:00	Lunch and Break					
	[E11 203] General Session II	[E11 206] General Session III	[E11 207] Special Session: Stochastic Modeling and Analysis	[E11 208] General Session IV	[E11 209] Special Session: Mathematical Modeling and Algorithms in Finance	
	Chair: Yoon, Kang Joon	Chair: Lee, Byungjoon	Chair: Hwang, Gang Uk	Chair: Kim, Jae Kyoung	Chair: Yoon, Ji-Hun	
13:00-13:20	A DD Solver for Fourth Order Elliptic Problems Park, Eun-Hee (Kangwon Natl. University)	Quantum BGK Model near a Global Fermi-Dirac Distribution Bae, Gi-Chan (Sungkyunkwan University)	Analysis of a Markovian feedback queue with multi-class customers and its application to the weighted round-robin queue Kim, Jerim (University of Seoul)	Mathematical Modeling of Neurotransmitters Release for Independent Synaptic Currents Seo, Sat byul (Kyungnam University)	Pricing Options with Exponential Levy Neural Network Huh, Jeonggyu (Yonsei University)	
13:20-13:40	Enriched Immersed Finite Element Method for Hele-Shaw Flows with Two Different Fluids Jo, Gwanghyun (KAIST)	Relativistic BGK model of Anderson-Witting type Hwang Byung-hoon (Sungkyunkwan University)	Statistical Analysis of Connectivity in Vehicular Networks Kim, Yoora (University of Ulsan)	Pharmacological Manipulation of Circadian Rhythms in Non-human Primate: Development of Precision Medicine Kim, Dae Wook (KAIST)	Data Analysis using Stochastic Volatility Models Ma, Yong-Ki (Kongju Natl. University)	
13:40-14:00	Application of Convex Splitting Runge-Kutta method to the phase-field crystal equation Shin, Jaemin (Ewha Womans University)	Particle Mesh Method(PMM) for Convection-Dominated Flow avoiding the Ringing Instability Lee, Byungjoon (Catholic University of Korea)	Stochastic Order Related to Multivariate Normal Distributions Kim, Bara (Korea University)	Mutation in the Rock-Paper-Scissors System Park, Junpyo (UNIST)	Beyond the Black-Scholes Model: Focusing on the Dynamics of Jumps Lee, Younhee (Chungnam Natl. University)	
14:00-14:20	High order Conservative Semi-Lagrangian Scheme for the BGK Model of the Boltzmann Equation Cho, Seung-Yeon (Sungkyunkwan University)		Adaptive Control Scheme in Wireless Ad Hoc Networks Hwang, Gang Uk (KAIST)	Locomotion of a Single-flagellated Bacterium Park, Yunyoung (Chung-Ang university)	A Sensitivity Analysis of the Long-term Expected Utility of Optimal Portfolios Park, Hyungbin (Seoul Natl. University)	
Closing						