

The Second HKSIAM Biennial Meeting

Friday, 1st September 2023

9:00 - 9:50	Plenary Session LT1 Chair: Chi-Wang Shu	Jan Hesthaven Neural Networks as Closure Models			
9:50 - 10:20	Closing Ceremony + Coffee Break				
10:20 - 12:20	MS08, Room 201	MS09, Room 202	MS05, Room 203	MS15, Room 209A	MS18, Room 209B
	Kunlun Qi	Gayoung An	Kwancheol Shin	Lei Zhang	Chenglong Bao
	Xiaoqian Xu	Sungbin Park	Daijun Jiang	Kristoffer Linder-Steinlein	Huangxin Chen
	Xuda Ye	Gi-Chan Bae	Jiahua Jiang	Jose Pinto	Hao Luo
		Beomjun Choi	Chang Min Hyun	Bo Wang	Sam Reynolds
12:30 - 14:30	Lunch Break				
14:30 - 16:30	MS06, Room 201	MS14, Room 202	MS16, Room 203	MS18, Room 209A	MS19, Room 209B
	Yat Tin Chow	Zhi-Feng Pang	Chen Cui	Bin Shi	Jinqiao Duan
	Yi Yu	Youwei Wen	Jie Peng	Jingrong Wei	Ting Gao
	Fuchen Chen	Tingting Wu	Feng Wang	Yuan Yao	Lihu Xu
	Sai-Mang Pun	Ke Yin	Junxian Wang	Xinyuan Zhao	Xiaopeng Chen

Friday, 1st September 2023
2nd HKSIAM Meeting @ LT1

9:00 - 9:50
Plenary Session
Chair:
Chi-Wang Shu

Jan Hesthaven
Neural Networks as Closure Models

9:50 - 10:00

Closing Ceremony

Friday, 1st September 2023

2nd HKSIAM Meeting @ Room 201

10:20 - 10:50, MS08, Kunlun Qi

Stability and convergence analysis of the Fourier-Galerkin spectral method for the Boltzmann equation

10:50 - 11:20, MS08, Xiaoqian Xu

Mixing flow and advection-diffusion-reaction equations

11:20 - 11:50, MS08, Xuda Ye

Exact Calculation of Quantum Thermal Average from Continuous Loop Path Integral Molecular Dynamics

14:30 - 15:00, MS06, Yat Tin Chow

An inverse problem in mean field game from partial boundary measurement

15:00 - 15:30, MS06, Yi Yu

Nonoverlapping Spectral Additive Schwarz Methods (NOSAS) and Their Extension to Multiscale Discretizations

15:30 - 16:00, MS06, Fuchen Chen

Least squares mixed GMsFEM for elliptic and parabolic problems

16:00 - 16:30, MS06, Sai-Mang Pun

Computational multi-scale method and scientific machine learning

Friday, 1st September 2023

2nd HKSIAM Meeting @ Room 202

10:20 - 10:50, MS09, Gayoung An
High-velocity tails of the inelastic and the multi-species mixture Boltzmann equations

10:50 - 11:20, MS09, Sungbin Park
Linear Landau Damping in Specular Reflective Boundary Condition

11:20 - 11:50, MS09, Gi-Chan Bae
BGK model for two-component gases near a global Maxwellian

11:50 - 12:20, MS09, Beomjun Choi
Thom's gradient conjecture for PDEs with variational structure

14:30 - 15:00, MS 14, Zhi-Feng Pang
Image Segmentation Based on the Hybrid Bias Field Correction

15:00 - 15:30, MS 14, Youwei Wen
Image segmentation using Bayesian inference for convex variant Mumford-Shah variational model

15:30 - 16:00, MS 14, Tingting Wu
Image recovery under non-Gaussian noise

16:00 - 16:30, MS 14, Ke Yin
A smoothing technique for non-smooth optimization with applications to constrained minimax problems

Friday, 1st September 2023

2nd HKSIAM Meeting @ Room 203

10:20 - 10:50, MS05, Kwancheol Shin
Electrical Impedance Tomography with Deep Calderon's Method

10:50 - 11:20, MS05, Daijun Jiang
Convergence Rates of Tikhonov Regularizations for Elliptic and Parabolic Inverse Radiativity Problems

11:20 - 11:50, MS05, Jiahua Jiang
Hybrid Projection Methods for Solution Decomposition in
Large-scale Bayesian Inverse Problems

11:50 - 12:20, MS05, Chang Min Hyun

14:30 - 15:00, MS16, Chen Cui
Fourier Neural Solver for Large Sparse Linear Algebraic Systems

15:00 - 15:30, MS16, Jie Peng
An adaptive BDDC preconditioner for advection-diffusion problems with a
stabilized finite element discretization

15:30 - 16:00, MS16, Feng Wang
A two-level additive Schwarz preconditioner for the Nitsche extended finite
element approximation of elliptic interface problems

16:00 - 16:30, MS16, Junxian Wang
A two-level preconditioner for the FE discretizations of Helmholtz equation
with mixed boundary condition

Friday, 1st September 2023
2nd HKSIAM Meeting @ Room 209A

10:20 - 10:50, MS15, Lei Zhang

Analysis and Calculation for Composite Scattering in Multilayered Media

10:50 - 11:20, MS15, Kristoffer Linder-Steinlein

Fourier method for inverse source problem using correlation of passive measurements

11:20 - 11:50, MS15, Jose Pinto

Reduce model for elastic scattering of multiples cracks

11:50 - 12:20, MS15, Bo Wang

Fast multipole method in layered media: from Helmholtz to Maxwell's equations

14:30 - 15:00, MS18, Bin Shi

Nesterov's accelerated gradient descent and high-resolution differential equation

15:00 - 15:30, MS18, Jingrong Wei

Transformed primal-dual methods for nonlinear partial differential equations

15:30 - 16:00, MS18, Yuan Yao

Towards sparse and interpretable learning via the inverse scale space method

16:00 - 16:30, MS18, Xinyuan Zhao

An accelerated proximal ADMM for optimal decentralized control of uncertain systems

Friday, 1st September 2023

2nd HKSIAM Meeting @ Room 209B

10:20 - 10:50, MS18, Chenglong Bao

On the global R-linear convergence of NAG method and beyond

10:50 - 11:20, MS18, Huangxin Chen

Efficient threshold dynamics methods for topology optimization for fluids

11:20 - 11:50, MS18, Hao Luo

A continuous perspective of the IC-PDPS

11:50 - 12:20, MS18, Sam Reynolds

Punctured FEM: Incorporating multiply connected mesh cells

14:30 - 15:00, MS19, Jinqiao Duan

Recent Advances in Stochastic Dynamical Systems

15:00 - 15:30, MS19, Ting Gao

Detecting Transition Pathway in Stochastic Dynamical Systems through
Optimal Control and Machine Learning

15:30 - 16:00, MS19, Lihu Xu

Approximation to the ergodic measure of the multiplicative SDEs driven by
stable processes

16:00 - 16:30, MS19, Xiaopeng Chen

Numerical Simulation of Statistical Behavior for Fractional Cox-Ingersoll-Ross Process