

Dynamics Days Asia Pacific 9

Lam Woo International Conference Centre, HKBU
IAS, Hong Kong University of Science and Technology

Programme Schedule – Overview

December 14 (Wednesday)

08:00 – 08:45	REGISTRATION		
08:45 – 09:00	OPENING AND WELCOME		
Plenary We1 Chair: Changsong Zhou (HKBU)			
09:00 – 09:45	Chin Kun Hu (Academia Sinica)	We1a Statistical and nonlinear physics can be useful for understanding some interesting problems in biological and human systems	
09:45 – 10:30	Hyunggyu Park (KIAS)	We1b Thermodynamics of Langevin systems with velocity-dependent forces	
10:30 – 11:00	BREAK		
Plenary We2 Chair: Abhishek Dhar (ICTS Bangalore)			
11:00 – 11:45	Qi Ouyang (Peking U)	We2a The free energy cost of accurate biochemical oscillations	
11:45 – 12:30	Ying-Cheng Lai (Arizona State U)	We2b Relativistic Quantum Chaos	
12:30 – 14:00	Lunch		
14:00 – 16:00	Orals We3		
	We3A Nonlinear Physics WLB103	We3B Network Science/Network Dynamics I WLB104	We3C Dynamical Systems WLB109
14:00 – 14:30	We3A1 S Flach (IBS)	We3B1 G Hu (Beijing Normal U)	We3C1 M Batchelor (Chongqing U & ANU)
14:30 – 15:00	We3A2 L Huang (Lanzhou U)	We3B2 BH Wang (USTC)	We3C2 PY Lai (National Central U TW)
15:00 – 15:15	We3A3 J Ren (Tongji U)	We3B3 B Zheng (Zhejiang U)	We3C3 ZS Feng (UTRGV)
15:15 – 15:30	We3A4 HK Chan (Harbin Inst. of Tech)		
15:30 – 15:45	We3A5 WR Zhong (Jinan U)	We3B4 Emily SC Ching (CUHK)	We3C4 J Wang (Xiamen U)
15:45 – 16:00		We3B5 B Li (HKUST)	We3C5 DP Yang (U of Sydney)
16:00 – 16:30	BREAK		
16:30 – 18:00	Poster Spotlight Presentation		
18:00 – 20:00	POSTERS & FOOD		
20:00–	FREE EVENING		

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Programme Schedule – Orals

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14:00 – 16:00	Orals We3	
We3A Session: Nonlinear Physics Chair: Yao Wang (HKU)	Sergej Flach (IBS)	We3A1 Intermittent Dynamics of Equipartitioned Many-Body Interacting Systems
	Liang Huang (Lanzhou U)	We3A2 Unusual T-symmetry breaking and control of chiral scars in chaotic Dirac fermion systems
	Jie Ren (Tongji U)	We3A3 Topological Distinction of Single Negative Metamaterials: From Acoustics, Phononics, to Photonics
	Ho-Kei Chan (Harbin Inst. of Tech.)	We3A4 Scaling analysis of negative differential thermal resistance
	Weirong Zhong (Jinan U)	We3A5 Collective diffusion in carbon nanotubes
We3B Session: Network Science/Network Dynamics I Chair: Guanrong Chen (CityU HK)	Gang Hu (Beijing Normal U)	We3B1 Inference of few targeted interactions in large networks by using noises as highlighters when most of network nodes are hidden
	Binghong Wang (USTC)	We3B2 Recent Research Progress On Controllability Transition In Complex Networks
	Bo Zheng (Zhejiang U)	We3B3 Correlation functions in non-stationary complex dynamic systems
	Emily S.C. Ching (CUHK)	We3B4 Reconstructing Complex Networks from Noisy Dynamics
	Bo Li (HKUST)	We3B5 Optimizing Synchronization Stability in Networks of Coupled Oscillators
We3C Session: Dynamical Systems Chair: Zhigang Zheng (Huaqiao U)	Murray Batchelor (Chongqing U & ANU)	We3C1 KPZ equation and stromatolites
	Pik-Yin Lai (National Central U TW)	We3C2 Control of Complex Dynamics in Cardiac and Physical Systems
	Zhaosheng Feng (UTRGV)	We3C3 Degenerate Parabolic Systems and Its Bounded Solutions
	Jiao Wang (Xiamen U)	We3C4 Superballistic wavepacket spreading in double kicked rotors
	Dongping Yang (U of Sydney)	We3C5 Low-dimensional dynamics for transitions from normal arousal states to epileptic seizures

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08:45 – 09:00	REGISTRATION		
Plenary Th1 Chair: Kunihiko Kaneko (Tokyo U)			
09:00 – 09:45	Celso Grebogi (Aberdeen U)	Th1a Tipping Point in Networked Dynamical Systems	
09:45 – 10:30	Shinichi Sasa (Kyoto U)	Th1b Thermodynamic entropy as a Noether invariant	
10:30 – 11:00	PHOTO TAKING & BREAK		
Plenary Th2 Chair: Hyunggyu Park (KIAS)			
11:00 – 11:45	Daniel Fisher (Stanford U)	Th2a Evolutionary Dynamics in High Dimensions	
11:45 – 12:30	Hugues Chaté (CEA Saclay)	Th2b Weak synchronization and large-scale collective oscillations in dense bacterial suspensions	
12:30 – 14:00	LUNCH		
14:00 – 16:00	Oral Th3		
	Th3A Oscillation/ Synchronization WLB103	Th3B Network Science/Network Dynamics II WLB104	Th3C Complex/Biological Systems I WLB109
14:00 – 14:30	Th3A1 H Kori (Ochanomizu U)	Th3B1 H Jeong (KAIST)	Th3C1 K Kaneko (Tokyo U)
14:30 – 15:00	Th3A2 ZG Zheng (Huaqiao U)	Th3B2 T Zhou (UESTC)	Th3C2 M Jensen (Copenhagen U)
15:00 – 15:15	Th3A3 T Kapitaniak (Lodz U of Tech.)	Th3B3 ZG Huang (Lanzhou U)	Th3C3 JP Nadal (Ecole Normale Supérieure)
15:15 – 15:30	Th3A4 Y Izumida (Nagoya U)	Th3B4 W Li (Hua-Zhong Normal U)	
15:30 – 15:45			Th3C4 J.-H. Jeon (POSTECH)
15:45 – 16:00	BREAK		

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Programme Schedule – Overview (Cont'd)

December 15 (Thursday)

16:00 – 18:15	Orals Th4		
	Th4A Pattern Formation WLB103	Th4B Network Science/Network Dynamics II WLB104	Th4C Neural Dynamics and Modeling I WLB109
16:00 – 16:30	Th4A1 I Kiss (Saint Louis U)	Th4B1 B Kahng (Seoul National U)	Th4C1 T Fukai (RIKEN)
16:30 – 17:00	Th4A2 G Osipov (Nizhny Novgorod State U)	Th4B2 ZH Liu (East China Normal U))	Th4C2 P beim Graben (Humboldt U)
17:00 – 17:15	Th4A3 LH Tang (HKBU)	Th4B3 H Kim (APCTP)	Th4C3 H Suetani (Oita U)
17:15 – 17:30	Th4A4 M Ha (Chosun U)	Th4B4 Bill CH Yeung (EdU)	Th4C4 HK Chan (U of Sussex)
17:30 – 17:45	Th4A5 K Sugimura (Ochanomizu U)	Th4B5 S Hata (Kagoshima U)	L Gollo (Queensland Inst. of Medical Research)
17:45 – 18:00	Th4A6 SH Lee (KIAS)	Th4B6 LP Chi (Central China Normal U)	
18:00 – 18:15	Th4A7 W Zou (Huazhong UST)	Th4B7 SW Son (Hanyang U)	Th4C6 CP Zhu (Nanjing U. of Aeronautics and Astronautics)
18:15 –	BANQUET		

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14:00 – 15:30	Orals Th3	
Th3A Session: Oscillation/ Synchronization Chair: Emily SC Ching (CUHK)	Hiroshi Kori (Ochanomizu U)	Th3A1 Why is eastbound travelling so heavy? A theoretical and experimental approach to the mechanism of jet lag
	Zhigang Zheng (Huaqiao U)	Th3A2 Synchronization of coupled phase oscillators: From dynamics to Statistical Physics
	Tomasz Kapitaniak (Lodz U of Tech.)	Th3A3 The smallest chimera state for coupled pendula
	Yuki Izumida (Nagoya U)	Th3A4 Synchronization and Energy Dissipation Rate in Coupled Oscillators on Circular Trajectories
Th3B Session: Network Science/Network Dynamics II Chair: Pik-Yin Lai (National Central U TW)	Hawoong Jeong (KAIST)	Th3B1 Almighty Google knows everything! - Big-data and Network Science
	Tao Zhou (UESTC)	Th3B2 Graph Mining
	Zigang Huang (Lanzhou U)	Th3B3 Optimization and resilience of complex supply-demand networks
	Wei Li (Hua-Zhong Normal U)	Th3B4 Optimal Transport in Worldwide Metro Networks
Th3C Session: Complex/Biological Systems I Chair: Namiko Mitarai (Niels Bohr Institute)	Kunihiko Kaneko (Tokyo U)	Th3C1 Macroscopic Theory of Phenotypic Adaptation and Evolution: Fluctuation-response, Genetic Assimilation, and Slow-Manifold Hypothesis
	Mogens Jensen (Copenhagen U)	Th3C2 Arnold Tongues and Mode Hopping in Cell Dynamics
	Jean-Pierre Nadal (Ecole Normale Superieure)	Th3C3 Dynamics of the 2005 French riots: a data-driven epidemic modeling
	Jae-Hyung Jeon (POSTECH)	Th3C4 Lateral anomalous diffusion in lipid bilayers: stochastic nature and the effect of crowding

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Programme Schedule – Orals (Cont'd)

December 15 (Thursday)

16:00 – 18:15	Orals Th4	
Th4A Session: Pattern Formation Chair: Hiroshi Kori (Ochanomizu U)	Istvan Kiss (Saint Louis U)	Th4A1 Self-organized stationary patterns in networks of bistable chemical reactions
	Grigory Osipov (Nizhny Novgorod State U)	Th4A2 Spatiotemporal patterns in a reaction-diffusion-mechanics system
	Leihan Tang (HKBU)	Th4A3 Sequential pattern formation as a front instability problem
	Meesoon Ha (Chosun U)	Th4A4 Relevance of columnar defect in KPZ growing interface
	Kaori Sugimura (Ochanomizu U)	Th4A5 Phase model for polarity ordering in spatially extended dynamical units: Derivation and dynamical properties
	Sang Hoon Lee (KIAS)	Th4A6 Efficiency at the maximum power output for simple two-level heat engine
	Wei Zou (Huazhong UST)	Th4A7 Enhancing dynamical robustness in aging networks of coupled nonlinear oscillators
Th4B Session: Network Science/Network Dynamics II Chair: Pak Ming Hui (CUHK)	Byungnam Kahng (Seoul National U)	Th4B1 Diverse types of percolation transitions
	Zong Hua Liu (East China Normal U)	Th4B2 Explosive Synchronization in Complex Networks
	Heetae Kim (APCTP)	Th4B3 Synchronization Dynamics in Power grids
	Chi Ho Bill Yeung (EdU)	Th4B4 Evolving Powergrids in Self-Organized Criticality: An analogy with Sandpile and Earthquakes
	Shigefumi Hata (Kagoshima U)	Th4B5 Localization of Laplacian eigenvectors on random networks
	Liping Chi (Central China Normal U)	Th4B6 Measuring microscopic evolution processes of temporal networks
	Seung-Woo Son (Hanyang U)	Th4B7 Dynamic Motifs of Strategies and Phase Diagram in Prisoner's Dilemma
Th4C Session: Neural Dynamics and Modeling I Chair: Taro Toyozumi (RIKEN)	Tomoki Fukai (RIKEN)	Th4C1 Optimal learning of hidden stochastic dynamics with redundant synaptic connections
	Peter beim Graben (Humboldt U)	Th4C2 Heteroclinic dynamics in neural fields

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December 15 (Thursday)

16:00 – 18:15	Orals Th4	
Th4C Session: Neural Dynamics and Modeling I (Cont'd) Chair: Taro Toyozumi (RIKEN)	Hiromichi Suetani (Oita U)	Th4C3 Chaotic itinerancy in multiple patterns generation using FORCE-based neural network learning
	Ho Ka Chan (U of Sussex)	Th4C4 Discriminating between correlated and uncorrelated signals with a small neural circuit
	Leonardo Gollo (Queensland Inst. of Medical Research)	Th4C5 Hierarchical timescales in the brain: structure-dynamics interplay, perturbations, and tuning curves
	Chen-Ping Zhu (Nanjing U. of Aeronautics and Astronautics)	Th4C6 A voxel of the neural network in the brain switches its states in the regime of criticality

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December 16 (Friday) (HKUST/IAS)

09:00 – 09:15	REGISTRATION (HKUST)	
09:15 – 09:30	OPENING at HKUST	
Plenary Fr1 Chair: Michael Wong (HKUST)		
09:30 – 10:15	Nigel Goldenfeld (UIUC)	Fr1a Statistical mechanics of the phase transition to turbulence: zonal flows, ecological collapse and extreme value statistics
10:15 – 11:00	Jürgen Kurths (PIK, Potsdam)	Fr1b Predictability of Extreme Rainfall Events via a Complex Network Approach
11:00 – 11:20	BREAK	
Plenary Fr2 Chair: Penger Tong (HKUST)		
11:20 – 12:05	Chao Tang (Peking U)	Fr2a Waddington landscape, nonlinear dynamics and stem cells
12:05 – 12:50	Si Wu (Beijing Normal U)	Fr2b Continuous attractor neural networks: candidate of canonical model for neural information representation
pm	Free Outing	

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December 17 (Saturday)

08:45 – 09:00	REGISTRATION		
Plenary Sa1 Chair: Shinichi Sasa (Kyoto U)			
09:00 – 09:45	Yuhai Tu (IBM Research)	Sa1a Dynamics of living systems: on sensory adaptation and biological oscillations	
09:45 – 10:30	Baowen Li (Tongji U)	Sa1b Anomalous thermal properties of low dimensional micro/nano materials	
10:30 – 11:00	BREAK		
Plenary Sa2 Chair: Leihan Tang (HKBU)			
11:00 – 11:45	Michael Breakspear (NSWU)	Sa2a Geometric constraints and dynamic consequences of the human connectome	
11:45 – 12:30	Abhishek Dhar (ICTS Bangalore)	Sa2b Understanding anomalous transport in one-dimensional systems through fluctuating hydrodynamics	
12:30 – 14:00	LUNCH		
14:00 – 15:45	Oral Sa3		
	Sa3A Statistical Physics WLB103	Sa3B Active Matter WLB104	Sa3C Neural Dynamics and Modeling II WLB109
14:00 – 14:30	Sa3A1 R Monasson (Ecole Normale Supérieure)	Sa3B1 Y Kafri (Technion)	Sa3C1 T Knöpfel (ICL)
14:30 – 15:00	Sa3A2 H Zhao (Xiamen U)	Sa3B2 J Tailleur (Université Paris Diderot-CNRS)	Sa3C2 CK Chan (Academia Sinica)
15:00 – 15:15	Sa3A3 Y Yamaguchi (Kyoto U)	Sa3B3 YY Li (Tongji U)	Sa3C3 T Toyozumi (RIKEN)
15:15 – 15:30	Sa3A4 A Dechant (Kyoto U)	Sa3B4 K Chen (Soochow U)	
15:30 – 15:45	Sa3A5 J Rocchi (Aston U)	Sa3B5 N Li (Fudan U)	Sa3C4 H Wang (HKUST)
15:45 – 16:00	BREAK		

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December 17 (Saturday)

16:00 – 18:15	Orals Sa4		
	Sa4A Statistical Physics WLB103	Sa4Ba Active Matter WLB104	Sa4C Complex/Biological Systems II WLB109
16:00 – 16:30	Sa4A1 M Turner (U of Warwick)	Sa4Ba1 T Sasamoto (Tokyo Inst. of Tech.)	Sa4C1 N Mitarai (Niels Bohr Inst.)
16:30 – 16:45	Sa4A2 Y Baek (Technion)	Sa4Ba2 A Kundu (ICTS Bangalore)	Sa4C2 MX Wang (NUST)
16:45 – 17:00	Sa4A3 P Chakraborty (Okinawa Inst. of Tech.)		Sa4C3 JW Mao (Huzhou U)
17:00 – 17:15	Sa4A4 CL Ren (Nanjing U)	Sa4Bb Data Analysis	Sa4C4 HY Shih (UIUC)
17:15 – 17:30	Sa4A5 A Andrianov (IBS)	Sa4Bb1 MC Wu (National Central U, TW)	Sa4C5 Joey CY Leung (Georgia Inst. of Tech.)
17:30 – 17:45	Sa4A6 KY Tsang (HKUST)	Sa4Bb2 SK Han (Chungbuk National U)	Sa4C6 YT Huang (Academia Sinica)
17:45 – 18:00	Sa4A7 W Choi (Seoul National U)		Sa4C7 M Kikuchi (Osaka U)
18:00 – 18:15	Sa4A8 T Yanagita (OECU)	Sa4Bb3 ZG Shao (SCNU)	Sa4C8 F Qi (HKBU)
18:15 – 18:30	Closing		

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14:00 – 15:45	Orals Sa3	
Sa3A Session: Statistical Physics Chair: Hwoong Jeong (KAIST)	Remi Monasson (Ecole Normale Superieure)	Sa3A1 Emergence of Compositional Representations in Restricted Boltzmann Machines
	Hong Zhao (Xiamen U)	Sa3A2 Particle diffusion in fluids: towards a complete theory
	Yoshiyuki Yamaguchi (Kyoto U)	Sa3A3 Relaxation of finite-size fluctuation in thermal equilibrium
	Andreas Dechant (Kyoto U)	Sa3A4 Gaussian white noise as a resource for microscopic engines
	Jacopo Rocchi (Aston U)	Sa3A5 Information flow among the FTSE 100 index components and financial crashes
Sa3B Session: Active Matter Chair: Anupam Kundu (ICTS Bangalore)	Yariv Kafri (Technion)	Sa3B1 Pressure in active systems
	Julien Tailleur (Université Paris Diderot-CNRS)	Sa3B2 Phase equilibria of phase-separating self- propelled particles
	Yunyun Li (Tongji U)	Sa3B3 Cargo towing by active Micro-swimmer
	Kang Chen (Soochow U)	Sa3B4 Micro-rotor of chain-grafted colloids in the active bath
	Na Li (Fudan U)	Sa3B5 Correlated diffusion of colloidal monolayers near the liquid-liquid interface
Sa3C Session: Neural Dynamics and Modeling II Chair: Gang Hu (Beijing Normal U)	Thomas Knöpfel (ICL)	Sa3C1 Cortical Circuit Dynamics Illuminated
	Chi Keung Chan (Academia Sinica)	Sa3C2 Anticipative Dynamics of a Retina probed by Stochastic Temporal Patterns
	Taro Toyozumi (RIKEN)	Sa3C3 Untangling Brain-Wide Dynamics by Cross- Embedding
	He Wang (HKUST)	Sa3C4 How the prior shapes neural structure for optimal multisensory integration

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December 17 (Saturday)

16:00 – 18:15	Orals Sa4	
Sa4A Session: Statistical Physics Chair: Hong Zhao (Xiamen U)	Matthew Turner (U of Warwick)	Sa4A1 The topological glass in ring polymers
	Yongjoo Baek (Technion)	Sa4A2 Dynamical symmetry breaking and phase transitions in diffusive systems with open boundaries
	Pinaki Chakraborty (Okinawa Inst. of Tech.)	Sa4A3 Energy cascade in transitional pipe flows
	Chunlai Ren (Nanjing U)	Sa4A4 Phase Separation Induced by Entropic Driving Forces
	Alexey Andreanov (IBS)	Sa4A5 Systematic classification of compact localised states and flatbands in $d = 1$
	Kin Yau Tsang (HKUST)	Sa4A6 Stable Bandwidth Allocation Against Fluctuations in Complex Networks
	Wonjun Choi (Seoul National U)	Sa4A7 Hybrid percolation transitions in contagion on networks
	Tatsuo Yanagita (OECU)	Sa4A8 Emergence of locally energetic motion in chain-type systems
Sa4Ba Session: Active Matter Chair: Jade Shi (HKBU)	Tomohiro Sasamoto (Tokyo Inst. of Tech.)	Sa4Ba1 Large deviation of a tagged particle in 1D symmetric exclusion process
	Anupam Kundu (ICTS Bangalore)	Sa4Ba2 Locally driven single file process
Sa4Bb Session: Data Analysis Chair: Jade Shi (HKBU)	Ming-Chya Wu (National Central U, TW)	Sa4Bb1 Developing adaptive data analysis approaches for protein research
	Seung Kee Han (Chungbuk National U)	Sa4Bb2 Multiscale Analysis of Compositional Complexity in Visual Images
	Zhi-Gang Shao (SCNU)	Sa4Bb3 Contrasting scaling properties of interglacial and glacial climates
Sa4C Session: Complex/Biological Systems II Chair: Chi Keung Chan (Academia Sinica)	Namiko Mitarai (Niels Bohr Institute)	Sa4C1 Pattern formation by growth and death: modeling phage plaques
	Maoxiang Wang (NUST)	SA4C2 Negative Feedback Regulation on Spatial Two-cell Lineage Model

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December 17 (Saturday)

16:00 – 18:15	Orals Sa4	
Sa4C Session: Complex/Biological Systems II (Cont'd) Chair: Chi Keung Chan (Academia Sinica)	Junwen Mao (Huzhou U)	Sa4C3 Modeling of Bacterial Horizontal Gene Transfer by Natural Transformation
	Hong-Yan Shih (UIUC)	Sa4C4 Stochastic individual-level model for the coevolution of cyanobacteria and their phages mediated by horizontal gene transfer
	Chung Yin Joey Leung (Georgia Inst. of Tech.)	Sa4C5 Synergistic elimination of bacteria by phage and the immune system
	Yuting Huang (Academia Sinica)	Sa4C6 Positive Feedback and Synchronized Bursts in Neuronal Cultures
	Macoto Kikuchi (Osaka U)	Sa4C7 Finding protein folding funnels in random networks
	Fei Qi (HKBU)	Sa4C8 Light-Driven Unidirectional Molecular Motor: Torque Analysis based on ab- initio calculation