SPMCS-2017

13-15 October 2017

Hampton By Hilton, Pan Long Cheng, Wuhan

October 13th

8:00-8:10	Alexandre Qiuping Wang	Welcome address

Session I Chair: Binghong Wang

8:10-8:40	K.Y. Michael Wong	How neural systems fuse information from different channels
8:40-9:10	Sumiyoshi Abe	C-MaxEnt and Bayesian approach to extreme values
9:10-9:40	Zhigang Zheng	Interface facilitated energy transport in coupled nonlinear lattices
9:40-10:00	**Photo and coffee break**	

Session II Chair: Sumiyoshi Abe

10:10-10:40	Aiguo Xu	Discrete Boltzmann modeling of non-equilibrium complex flows
10:40-11:10	Alberto Robledo	An unorthodox thermal system analogue of the onset of chaos
11:10-11:40	Jiping Huang	Macroscopic network of thermal conduction
11:40-12:10	Alexandre Qiuping Wang	Is this a true least action principle for damped motion?
12:10-12:40	Liang Huang	Symmetry blockade and route to equipartition in square graphene resonators
12:40-14:00	**Lunch break**	

October 13th

Session III Chair: Alberto Robledo

14:00-14:30	Chin-Kun Hu	Universality and scaling in human and social systems
14:30-15:00	Armen Allahverdyan	Modeling phoneme distribution: the effect of author-dependence
15:00-15:30	Pan-Jun Kim	Systems approach to complex human microbial networks
15:30-16:00	Jinshan Wu	What is scientometrics from the perspective of network science and data science
16:00-16:20	**Coffee break**	

Session IV Chair: K.Y. Michael Wong

16:20-16:50	Xingang Wang	Synchronous patterns in complex networks
16:50-17:20	Yanwu Wang	Collective behavior of networked systems
17:20-17:50	Xinjian Xu	Information propagation in directed networks
17:50-18:20	Jianguo Liu	Modelling and application of online user collective behaviors

October 14th

Session I Chair: Aiguo Xu

8:00-8:30	Changsong Zhou	Complex neural connectivity and activity: perspective from cost-efficiency trade-off
8:30-9:00	Jiqian Zhang	New nonlinear dopant kinetic model of memristor
9:00-9:30	Dingding Han	Gibrat fluctuation and optimal navigation of the time-varying complex systems
9:30-10:00	Ying Fan	Random walk on signed network
10:00-10:30	**Coffee break**	

Session II Chair: Changsong Zhou

10:30-11:00	Huijie Yang	Visibility graphlet approach to time series
11:00-11:30	Yi Zhao	Progress on equivalent transformation and reciprocal characterization between complex networks and time series
11:30-12:00	Jin Zhou	Dynamics of complex network: from monoplex to multiplex
12:00-12:30	Zike Zhang	Machine learning on complex networks
12:30-14:00	**Lunch break**	

October 14th

Session III Sub-session A Chair: Ying Fan

14:00-14:25	Pan Zhang	Mean-field-based spectral methods for unsupervised learning
14:25-14:50	Congjie Ou	Exotic properties of quantum heat engine including the energy-conservation process
14:50-15:15	Chunyang Wang	Anomalous statistical behaviours resulted from fractional damping
15:15-15:40	Liang Luo	Quenched or annealed: a criterion for non-gaussian diffusion
15:40-16:00	**Coffee break**	

Session III Sub-session B Chair: Liang Huang

14:00-14:25	Yong Zou	Explosive phenomena in complex networks
14:25-14:50	Jie Liu	Mutual representation between nonlinear time series and complex network graphs and its applications
14:50-15:15	Xiaofan Liu	Analysis and modeling of the adaptive coevolution in heterogeneous double-layer networks
15:15-15:40	Xin Zhang	Risk contagion analysis based on a complex credit network model
15:40-16:00	**Coffee break**	

October 14th

Session IV	Sub-session A	Chair: Jiping Huang
16:00-16:25	Zigang Huang	Emergence and control of collective behavior in resource-allocation systems
16:25-16:50	Zhifu Huang	TBA
16:50-17:15	Shengfeng Deng	Spreading dynamics of forget-remember mechanism
18:30	**Banquet**	

Session IV	Sub-session B	Chair: Xingang Wang
16:00-16:25	Changgui Gu	Strengthen the circadian rhythms
16:25-16:50	Ye Wu	Evidence and modeling for heavy-tail phenomena in man-made systems
16:50-17:15	Yunfeng Chang	The way to uncover community structure with core and diversity
17:15-17:40	Longfeng Zhao	Stock market as temporal network
18:30	**Banquet**	

October 15th

Session I Chair: Zhigang Zheng

8:00-8:30	Binghong Wang	Recent research progress on controllability transition in complex networks
8:30-9:00	Tao Jia	Degree correlation induce bimodality in controlling complex networks
9:00-9:30	Rui Menezes	Hysteresis and duration dependence of financial crises in the US: evidence from 1871-2016
9:30-10:00	Mauricio Pato	Statistical distribution of the length of words
10:00-10:20	**Coffee break**	

October 15th

Session II Chair: Xinjian Xu

10:20-10:50	Chenping Zhu	Universal patterns behind big data of passenger flight departure delays in United States
10:50-11:20	Wenlian Lu	Some progresses in modeling, analysis and application of interdependent complex networks
11:20-11:50	Haifeng Zhang	Reconstructing complex networks from discrete time series
11:50-12:20	Chengyi Xia	Attack vulnerability and epidemic dynamics on two interdependent networks
12:20-12:50	Zhihong Guan	Hybrid dynamics of complex biological networks
12:50-13:00	**Closing remark**	
13:30	Excursion	

How neural systems fuse information from different channels

Title:	How neural systems fuse information from different channels
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Abstract: Neural systems gather information from different channels resulting in enhanced reliability. The optimal estimate is given by Bayes' rule, and remarkably the brain can achieve this optimum. It is therefore interesting to consider the neural architecture and mechanism underlying this feat. We study a decentralized network architecture where same-channel and cross-channel information are processed in parallel. Using stochastic gradient descent, projections to basis functions, and a perturbative approach in the limit of weak correlation, the most striking discovery is that the direct and indirect cross-channel pathways are opposite to each other – an apparently redundant architecture.

October 13th 8:45-9:00