2nd WHU Summer Theory Institute

Frontiers in theoretical and computational condensed matter physics

July 4 – 8, 2016

School of Physics and Technology

Wuhan University

Initiated in 2015, the 2nd WHU Summer Theory Institute will focus on the frontiers in theoretical and computational condensed matter physics. The purpose of the Summer Theory Institute is to bring together leading experts from the national and international communities to discuss the latest developments, to address fundamental issues and major challenges, and, in particular, to facilitate new research directions and collaborations across the borders.

Advisory Committee

Zhengyou Liu (WHU) Zhenyu Zhang (USTC)

Organizing Committee

Huijun Liu Li Mao Yu Wang Wenxian Zhang

Contact

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Qixian Peng: ctp@whu.edu.cn 15271816021 (general affairs)

Time	Title	Speaker	Affiliation
July 4 (Monday) Morning session			
9:00—9:15	Welcome speech	Jianbo Wang	Wuhan University
9:15—10:00	**Lecture 1-1**: *Crystal Structure Predictions Using Adaptive Genetic Algorithm and Motif Search* methods	Kai-Ming Ho	Ames Laboratory
10:05—10:50	**Lecture 1-2**: *Crystal Structure Predictions Using Adaptive Genetic Algorithm and Motif Search* methods	Kai-Ming Ho	Ames Laboratory
10:50—11:10	Coffee break		
11:10—11:55	**Lecture 1-3**: *Crystal Structure Predictions Using Adaptive Genetic Algorithm and Motif Search* methods	Kai-Ming Ho	Ames Laboratory
12:00—15:00	Lunch break		
July 4 (Monday) Afternoon session			
15:00—15:45	**Lecture 2-1**: *The theory, simulation methods and thermal conduction of nano materials*	Gang Zhang	Institute of High Performance Computing, A*Star, Singapore
15:50—16:35	**Lecture 2-2**: *The theory, simulation methods and thermal conduction of nano materials*	Gang Zhang	Institute of High Performance Computing, A*Star, Singapore
16:35—16:55	Coffee break		
16:55—17:40	**Lecture 2-3**: *The theory, simulation methods and thermal conduction of nano materials*	Gang Zhang	Institute of High Performance Computing, A*Star, Singapore
18:00—19:30	Dinner		

会议地点：新物理楼五楼多功能报告厅

Time	Title	Speaker	Affiliation
July 5 (Tuesday) Morning session			
9:00—9:45	**Lecture 2-4**: *The theory, simulation methods and thermal conduction of nano materials*	Gang Zhang	Institute of High Performance Computing, A*Star, Singapore
9:50—10:50	**Talk 1**: *Ehrenfest breakdown of the mean-field dynamics of Bose gases*	Biao Wu	Peking University
10:50—11:10	Coffee break		
11:10—12:10	**Talk 2**: *Majorana Fermions and Topological Quantum Computation*	Chuanwei Zhang	University of Texas at Dallas
12:10—15:00	Lunch break		
July 5 (Tuesday) Afternoon session			
15:00—15:45	**Lecture 3-1**: *Crystal defects: stability, property and application*	Yujun Zhao	South China University of Technology
15:50—16:35	**Lecture 3-2**: *Crystal defects: stability, property and application*	Yujun Zhao	South China University of Technology
16:35—16:55	Coffee break		
16:55—17:40	**Lecture 3-3**: *Crystal defects: stability, property and application*	Yujun Zhao	South China University of Technology
18:00—19:30	Dinner		

Time	Title	Speaker	Affiliation
June 6 (Wednesday) Morning session			
9:00—10:00	**Talk 3**: *Dephasing and disorder effects in topological systems*	Xincheng Xie	Peking University
10:00—11:00	**Talk 4**: *Wilson Ratio and Quantum Liquids*	Haiqing Lin	Beijing Computational Science Research Center
11:00—11:15	Coffee break		
11:15—12:15	**Talk 5**: 拓扑电子态与拓扑电子材料	Zhong Fang	Institute of Physics, Chinese Academy of Sciences
12:15—15:00	Lunch break		
July 6 (Wednesday) Afternoon session			
15:00—16:00	**Talk 6**: 半导体量子结构中的人工规范场	Kai Chang	Institute of Semiconductors, Chinese Academy of Sciences
16:00—17:00	**Talk 7**: *Half-Metallic and Spintronic Properties of Monolayered Nanoribborns*	Zhenyu Zhang	University of Science and Technology of China
17:00—17:15	Coffee break		
17:15—18:15	**Talk 8**: *Swarm-intelligence Based Structure Design Method towards Materials Discovery and its Application*	Yanming Ma	Jilin University
18:15—19:30	Dinner		

会议地点：新物理楼五楼多功能报告厅

Time	Title	Speaker	Affiliation
June 7 (Thursday) Morning session			
9:00—9:45	**Lecture 4-1**: *Topological electronic states and materials*	Rui Yu	Harbin Institute of Technology
9:50—10:35	**Lecture 4-2**: *Topological electronic states and materials*	Rui Yu	Harbin Institute of Technology
10:35—10:55	Coffee break		
10:55—11:40	**Lecture 4-3**: *Topological electronic states and materials*	Rui Yu	Harbin Institute of Technology
12:00—15:00	Lunch break		
July 7 (Thursday) Afternoon session			
15:00—16:00	**Talk 9**: *Strong intermolecular orbital interaction in weak interaction systems*	Ruiqin Zhang	City University of Hong Kong
16:00—16:45	**Lecture 4-4**: *Topological electronic states and materials*	Rui Yu	Harbin Institute of Technology
16:45—17:00	Coffee break		
17:00—17:45	**Lecture 4-5**: *Topological electronic states and materials*	Rui Yu	Harbin Institute of Technology
18:00—19:30	Dinner		

Time	Title	Speaker	Affiliation
June 8 (Friday) Morning session			
9:00—9:45	**Lecture 4-6**: *Topological electronic states and materials*	Rui Yu	Harbin Institute of Technology
9:50—10:50	**Talk 10**: *Interaction effects in 2D topological insulators – edge instability and transport*	Congjun Wu	University California, San Diego
10:50—11:05	Coffee break		
11:05—12:05	**Talk 11**: *Growth mechanism and property exploration of graphene and graphene-like nanomaterials*	Jinlan Wang	Southeast University
12:05—15:00	Lunch break		
July 8 (Friday) Afternoon session			
15:00—16:00	**Talk 12**: *A New Approach for the Mesoscopic and Macroscopic Modeling of Quantum Systems: Application in 2D Materials*	Shengjun Yuan	Radboud University
16:00—16:20	**Talk 13**: *Enhancing the thermoelectric performance and bridging the p- and n-type carrier asymmetry of Bi_2Te_3 thin films via topological surface states*	Huijun Liu	Wuhan University
16:20—16:40	**Talk 14**: *Plasmon in topological superconductor*	Li Mao	Wuhan University
16:40—16:55	Coffee break		
16:55—17:15	**Talk 15**: *Spin-1 BEC in magnetic fields*	Wenxian Zhang	Wuhan University
17:15—17:35	**Talk 16**: *Mott insulating states and quantum phase transitions of correlated SU(2N) Dirac fermions*	Yu Wang	Wuhan University
17:35—17:55	**Talk 17**: *Valley transport in sonic crystals*	Chunyin Qiu	Wuhan University
17:55—18:15	**Talk 18**: *Non-perturbative phases of bilayer graphene*	Junji Jia	Wuhan University
18:15—19:30	Dinner		

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Participants

Kai Chang (Institute of Semiconductors, Chinese Academy of Sciences)

Zhong Fang (Institute of Physics, Chinese Academy of Sciences)

Kai-Ming Ho (Ames Laboratory)

Junji Jia (Wuhan University)

Haiqing Lin (Beijing Computational Science Research Center)

Huijun Liu (Wuhan University)

Yanming Ma (Jilin University)

Li Mao (Wuhan University)

Chunyin Qiu (Wuhan University)

Jinlan Wang (Southeast University)

Yu Wang (Wuhan University)

Biao Wu (Peking University)

Congjun Wu (University California, San Diego)

Xincheng Xie (Peking University)

Shengjun Yuan (Radboud University)

Rui Yu (Harbin Institute of Technology)

Zhenyu Zhang (University of Science and Technology of China)

Chuanwei Zhang (University of Texas at Dallas)

Ruiqin Zhang (City University of Hong Kong)

Gang Zhang (Institute of High Performance Computing, A*Star,

Singapore)

Wenxian Zhang (Wuhan University)

Yujun Zhao (South China University of Technology)

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