



3rd WHU Summer Theory Institute

*Frontiers in
Quantum Control and
Computational Physics*

July 3 – 7, 2017
School of Physics and Technology
Wuhan University

Frontiers in Quantum Control and Computational Physics

Initiated in 2015, the 3rd WHU Summer Theory Institute will focus on the frontiers in quantum control and computational 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

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Zhenyu Zhang (USTC)

Organizing Committee

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会议地点：新物理楼五楼多功能报告厅

Program

Time	Title	Speaker	Affiliation
July 3(Monday) Morning session			
09:00—10:30	Basic theory and applications of Nanodcal	Lufeng Ruan	Hongzhiwei Technology
10:30—10:45	Coffee break		
10:45—12:15	Quantum transport modeling and computational procedures	Lufeng Ruan	Hongzhiwei Technology
12:15—14:45	Lunch break		
July 3 (Monday) Afternoon session			
14:45—15:45	Topological Semimetals: Where the Unconventional Massless Fermions Are	Hongming Weng	Institute of Physics, CAS, China
15:45—16:15	Coffee break		
16:15—17:45	Basic theory and applications of RESCU	Wenjie Ouyang	Hongzhiwei Technology
18:00—19:30	Dinner		
Time	Title	Speaker	Affiliation
July 4 (Tuesday) Morning session			
9:00-9:10	Welcome Speech	Jianbo Wang	Wuhan Univ., China
9:10—10:10	Fluid Mechanics and Some Novel Photonic/Phononic Surface Waves	Baile Zhang	Nanyang Tech. Univ., Singapore
10:10—11:10	Ultrafast Quantum Operation in Electrical Controlled Quantum Dot System	Guoping Guo	Univ. of Sci. & Tech. of China
11:10—11:25	Coffee break		
11:25—12:25	Dirac Superconductors	Fan Zhang	Univ. of Texas at Dallas, USA
12:25—14:45	Lunch break		

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Time	Title	Speaker	Affiliation
July 4 (Tuesday) Afternoon session			
14:45—15:45	Rhombohedral Sb ₂ Se ₃ as an intrinsic topological insulator due to strong van der Waals inter-layer coupling	Huijun Liu	Wuhan Univ., China
15:45—16:45	Suppressing the stray magnetic fields in a dipolar spin-1 BEC	Wenxian Zhang	Wuhan Univ., China
16:45—17:00	Coffee break		
17:00—18:00	Synthetic gauge flux in Weyl crystal and wire metamaterials	Wenjie Chen	The HongKong Univ. Sci. & Tech., HK
18:00—19:30	Dinner		
Time	Title	Speaker	Affiliation
July 5 (Wednesday) Morning session			
9:00—10:00	Approaches to Quantum Open Systems: Density Operators, Pure States and Stochastic Propagators	Ting Yu	Stevens Institute of Tech., USA
10:00—11:00	Valley Acoustics in Sonic Crystals	Chunying Qiu	Wuhan Univ., China
11:00—11:15	Coffee break		
11:15—12:15	Inelastic transport in molecular conductors	Jingtao Lu	Huazhong Univ. of Sci. & Tech., China
12:15—14:45	Lunch break		
July 5 (Wednesday) Afternoon session			
14:45—15:45	Time-dependent Density Functional Theory with Applications to Excited States and Plasmonics	Shiwu Gao	CSRC Beijing, China
15:45—16:45	Functional Maps for Exploring Novel Thermoelectric Materials	Wenqing Zhang	Shanghai Univ., China
16:45—17:00	Coffee break		
17:00—18:00	Thermal Transport in Complex Materials	Wenqing Zhang	Shanghai Univ., China
18:00—19:30	Dinner		

会议地点：新物理楼五楼多功能报告厅

Frontiers in Quantum Control and Computational Physics

Time	Title	Speaker	Affiliation
July 6 (Thursday) Morning session 武汉大学樱顶老图书馆			
10:00—11:30	计算物理科学的乐趣	Jiaming Li	Shanghai Jiao Tong Univ., China
12:00—14:45	Lunch break		
July 6 (Thursday) Afternoon session			
14:45—15:45	Atomistic Growth Mechanisms of 2D Materials Beyond Graphene	Zhenyu Zhang	Univ. of Sci. & Tech. of China
15:45—16:45	A New Approach for the Mesoscopic and Macroscopic Modeling of Quantum Systems: Application in 2D Materials	Shengjun Yuan	Wuhan Univ., China
16:45—17:00	Coffee break		
17:00—18:00	Surface Fermi arc states and bulk spin Hall effect in Weyl semimetals	Yan Sun	MPI for Chemical Physics of Solids, DE
18:00—19:30	Dinner		
Time	Title	Speaker	Affiliation
July 7 (Friday) Morning session			
9:00—10:00	The unreasonable effectiveness of quantum theory: a logical inference approach	Hans De Raedt	Univ. of Groningen, NL
10:00—11:00	Quantum Spin Dynamics on the D-Wave Quantum Computer	Kristel Michielsen	Jülich Supercomputing Centre, DE
11:00—11:15	Coffee break		
11:15—12:15	Modulation of Electronic and Optical Properties of 2D Crystals Through Strain Engineering	Rafael Roldan	CSIC Madrid, ES
12:15—14:45	Lunch break		
July 7 (Friday) Afternoon session			
14:45—18:00	Free Discussion		
8:00—19:30	Dinner		

会议地点：新物理楼五楼多功能报告厅

Participants

Wenjie Chen (The Hong Kong University Sci. & Tech., Hong Kong)
Hans De Raedt (University of Groningen, The Netherlands)
Shiwu Gao (CSRC Beijing, China)
Guoping Guo (University of Science and Technology of China, China)
Junji Jia (Wuhan University, China)
Jiaming Li (Shanghai Jiao Tong University, China)
Huijun Liu (Wuhan University, China)
Zhengyou Liu (Wuhan University, China)
Li Mao (Wuhan University, China)
Kristel Michielsen (Jülich Supercomputing Centre, Germany)
Chunyin Qiu (Wuhan University, China)
Rafael Roldan (CSIC Madrid, Spain)
Yan Sun (Max Planck Institute for Chemical Physics of Solids, Germany)
Yu Wang (Wuhan University, China)
Rui Yu (Wuhan University, China)
Ting Yu (Stevens Institute of Technology, USA)
Shengjun Yuan (Wuhan University, China)
Baile Zhang (Nanyang Technology University, Singapore)
Fan Zhang (University of Texas at Dallas, USA)
Wenqing Zhang (Shanghai University, China)
Wenxian Zhang (Wuhan University, China)
Zhenyu Zhang (University of Science and Technology of China, China)