

## Workshop on Recent Developments in Chiral Matter and Topology (Dec. 6-9)

Place: NTU Cosmology Hall 台大次震宇宙館 4F Lecture Room

Day 1: Dec. 6		
Time	Speaker	Talk Title
Chair : Guang-Yu Guo (National Taiwan U. - Center for Theoretical Physics )		
09:30 ~ 09:35	Shiuh-Tzung Liu (Dean, College of Sciences, National Taiwan U.) Mei-Yin Chou (Vice President, Academia Sinica) Yuan-Huei Chang ( Chair, Physics Dept., National Taiwan U.) Shih-I Chu (Former Director, National Taiwan U.– Center for Theoretical Sciences) Shin-Nan Yang (Former Director, National Taiwan U.– Center for Theoretical Sciences) Jiunn-Wei Chen (Former Director, National Taiwan U.– Center for Theoretical Sciences) Guang-Yu Guo ( Director, National Taiwan U. – Center for Theoretical Physics)	National Taiwan U. – Center for Theoretical Physics Grand Opening (揭牌)
09:35 ~ 10:00	Shiuh-Tzung Liu (Dean, College of Sciences, National Taiwan U.) Mei-Yin Chou (Vice President, Academia Sinica) Shin-Nan Yang (Former Director, National Taiwan U.– Center for Theoretical Sciences)	Inaugural Ceremony and Opening Section
10:00 ~ 10:45	Xi Dai (Hong Kong U. of Science and Technology)	Zeeman Effect in Topological Materials: from First Principle Calculation to Spin Zero Effect in Quantum Oscillation
Break ( Put on Posters)		
Chair : Di-Lun Yang ( RIKEN Nishina Center; Yukawa Institute for Theoretical Physics, Kyoto U.)		
11:15 ~ 12:00	Jin-Feng Liao (Indiana U.)	Novel Quantum Phenomena in the Subatomic Swirls
12:00 ~ 12:30	Masatoshi Sato (Yukawa Institute for Theoretical Physics, Kyoto U.)	Quantum Response of Majorana Fermions in Topological Crystalline Superconductors
Lunch		

## Workshop on Recent Developments in Chiral Matter and Topology (Dec. 6-9)

Place: NTU Cosmology Hall 台大次震宇宙館 4F Lecture Room

Chair : Ming-Che Chang (National Taiwan Normal U.)		
14:00 ~ 14:30	Shun-Qing Shen (U. of Hong Kong)	Magnetotransport Properties in Three-Dimensional Dirac Materials
14:30 ~ 15:00	Ching-Kai Chiu ( Kavli Institute for Theoretical Sciences, U. of Chinese Academy of Sciences )	Realization of the Topological Phases Protected by Chiral Symmetry
15:00 ~ 15:30	Tay-Rong Chang (National Cheng Kung U.)	Topological Crystalline Insulator: from Symmetry Indicators to Material Discovery.
15:30 ~ 16:00	Shin-Ming Huang (National Sun Yet-Sen U.)	Two Types of Weyl Fermion Creation
Break		
Chair : Koichi Hattori (Fudan U.)		
16:30 ~ 17:00	Haruki Watanabe (U. of Tokyo)	Interplay between Symmetry and Topology in Many-Body Systems
17:00 ~ 17:30	Feng-Li Lin (National Taiwan Normal U.)	Decoherence Patterns of Topological Qubits
17:30 ~	Reception and Poster Session	

Day 2: Dec. 7		
Time	Speaker	Talk Title
Chair : Chang-Tse Hsieh (Kavli Institute for the Physics and Mathematics of the Universe; Institute for Solid State Physics, U. of Tokyo)		
09:00 ~ 09:45	Shinsei Ryu (U. of Chicago)	Time Reversal Anomalies in SPT Phases
09:45 ~ 10:30	Igor Shovkovy (Arizona State U.)	Chiral Plasmas: from Cosmology to Technology
Break		
Chair : Aron Beekman (Keio U.)		
11:00 ~ 11:30	Mei-Yin Chou (Academia Sinica)	Topological Properties of Gapped Graphene Nanoribbons with Spatial Symmetries
11:30 ~ 12:00	Ming-Che Chang (National Taiwan Normal U.)	Chiral Magnetic Effect in Two-Band Lattice Model of Weyl Semimetal
12:00 ~ 12:30	Chang-Tse Hsieh (Kavli Institute for the Physics and Mathematics of the Universe; Institute for Solid State Physics, U. of Tokyo)	Anomaly Matching and Symmetry-Protected Criticality in 1d Quantum Many-body Systems

## Workshop on Recent Developments in Chiral Matter and Topology (Dec. 6-9)

Place: NTU Cosmology Hall 台大次震宇宙館 4F Lecture Room

Lunch		
Chair : Masatoshi Sato (Yukawa Institute for Theoretical Physics, Kyoto U.)		
14:00 ~ 14:30	Naoto Nagaosa (RIKEN/U. of Tokyo)	Nonreciprocal Phenomena in Chiral Materials
14:30 ~ 15:00	Aron Beekman (Keio U.)	Dislocation-Mediated Quantum Melting
15:00 ~ 15:30	Akira Furusaki (RIKEN)	Reduction of the Classification of Free-Fermion Topological Phases by Interactions
Break		
Chair : Jiunn-Wei Chen (National Taiwan U.)		
16:00 ~ 16:30	Qun Wang (U. of Science & Technology of China)	Wigner Function of Chiral Fermions
16:30 ~ 17:00	Di-Lun Yang (RIKEN Nishina Center; Yukawa Institute for Theoretical Physics, Kyoto U.)	Chiral Kinetic Theory and Quantum Transport of Chiral Fluids
17:00 ~ 17:30	Koichi Hattori (Fudan Univ.)	Magnetohydrodynamics with Chiral Anomaly
17:30 ~ 18:00	Yuji Hirono (Asia Pacific Center for Theoretical Physics / Brookhaven National Laboratory)	Chiral Fluids with Dynamical Electromagnetism
18:00 ~	Workshop dinner	

Day 3: Dec. 8		
Time	Speaker	Talk Title
Chair : Tetsuo Hatsuda (RIKEN Interdisciplinary Theoretical and Mathematical Sciences)		
09:00 ~ 09:45	Naoki Yamamoto (Keio U.)	Chiral Matter and Topology in Astrophysics
09:45 ~ 10:30	Tomoki Ozawa (RIKEN Interdisciplinary Theoretical and Mathematical Sciences)	Topology and Chiral Physics in Atomic, Molecular, and Optical Systems
Break		
Chair : Yuji Hirono (Asia Pacific Center for Theoretical Physics / Brookhaven National Laboratory)		
11:00 ~ 11:30	Yoshimasa Hidaka (RIKEN)	Particle Productions from Chiral Matter
11:30 ~ 12:00	Arata Yamamoto (U. of Tokyo)	Non-Abelian Vortex in Lattice Gauge Theory

## Workshop on Recent Developments in Chiral Matter and Topology (Dec. 6-9)

Place: NTU Cosmology Hall 台大次震宇宙館 4F Lecture Room

12:00 ~ 12:30	Masaru Hongo (RIKEN)	Anomaly-Induced Transport Phenomena in Local Thermal Equilibrium.
Lunch		
Chair : Akira Furusaki (RIKEN)		
14:00 ~ 14:30	Masaki Oshikawa (Institute for Solid State Physics, U. of Tokyo)	(TBA)
14:30 ~ 15:00	Sungkit Yip (Academia Sinica)	Chiral Anomaly via Quasiclassical Kinetic Equation
15:00 ~ 15:30	Chung Hou Chung (National Chiao Tung U.)	Chiral and Helical Majorana Fermions in Non-Centrosymmetric Superconductors on Honeycomb Lattice
Break		
Chair : Hsiang-Nan Li (Academia Sinica)		
16:00 ~ 16:05	Pei-Ming Ho, Yu-Tin Huang ( National Taiwan U. )	Golden-Jade Fellow Award Ceremony
16:05 ~ 16:30	Yu-Tin Huang (National Taiwan U.)	Hidden and Useful Topological Features of the Ising Network
16:30 ~ 17:00	Seiji Sugawa (Kyoto U.)	Chern Number from Quantum-Simulated Monopoles
17:00 ~ 17:30	Guang-Yu Guo (National Taiwan U.)	Tuning Topological Phase Transitions in Hexagonal Photonic Lattices Made of Triangular Rods
17:30 ~ 18:00	Tetsuo Hatsuda (RIKEN Interdisciplinary Theoretical and Mathematical Sciences)	Workshop Summary
Closing		
Day 4: Dec. 9		
Excursion (Self Organized)		

**Workshop on Recent Developments in Chiral Matter and Topology (Dec. 6-9)**

Place: NTU Cosmology Hall 台大次震宇宙館 4F Lecture Room

Posters	
Size: 1K (30" ×42" or 76cm ×106cm, 全開)	
Submitting author (affiliation)	Title
(1) Peng-Jen Chen (Institute of Physics, Academia Sinica)	Anomalous Z <sub>2</sub> Antiferromagnetic Topological Phase in Pressurized SmB <sub>6</sub>
(2) Chih-Yu Chen (National Taiwan U.)	Effective Lagrangian for Axial Anomaly and Its Applications in Dirac and Weyl Semimetals
(3) Syu-You Guan (Institute of Physics, Academia Sinica)	Termination-dependent Superconducting Topological Surface States in Non-Centrosymmetric PbTaSe <sub>2</sub>
(4) Hsih-Chia Hsieh (Providence U.)	Algorithm to Convergence and Chiral Matter: Temperature and Time
(5) —Canceled—	—Canceled—
(6) Chi-Cheng Lee (Institute for Solid State Physics, U. of Tokyo)	First-Principles Studies of Momentum Distribution of Dirac/Weyl Fermions in Condensed Matter
(7) Kunchala Ramesh Babu (National Taiwan U. and National Center for Theoretical Sciences)	Electron-Phonon Coupling, Superconductivity and Nontrivial Band Topology in NbN Polytypes
(8) Hai-Xiao Wang (National Taiwan U.)	Optical Dirac Point in Woodpile Photonic Crystals