

## PROGRAMME

### Day 1 (January 7, Monday)

- 08:30 - 09:00 Registration  
 09:00 - 09:20 Opening and Welcome Speech, by DongKeun Ki (Conference co-chair)

#### **Morning session 1: Correlated Topological Matter**

*Chaired by Fuchun Zhang (HKU & University of Chinese Academy of Sciences)*

- 09:20 - 09:50 Topological superfluid for 1D spin-1 bosons and its continuous phase transition  
**Xiao-Gang Wen (Massachusetts Institute of Technology)**  
 09:50 - 10:20 Superconductivity in  $\text{Sr}_2\text{RuO}_4$ : Theory vs Experiments  
**Qiang-Hua Wang (Nanjing University)**  
 10:20 - 10:50 Chiral magnetic effect and collective modes in topological semimetals  
**Xi Dai (Hong Kong University of Science and Technology)**  
 10:50 - 11:20 Tea Break

#### **Daniel Tsui Fellowship Award Presentation, Centre of Theoretical and Computational Physics**

- 11:20 - 11:30 Chaired by **Jian Wang**, the award is presented by **Fuchun Zhang**  
 11:30 - 12:00 Emergent quantum criticality in spin-1 magnets and some thoughts on thermal Hall transports  
**Gang Chen (The University of Hong Kong)**  
 12:00 - 14:00 Lunch and Poster Session

#### **Afternoon session 2: Physics of 2D Heterostructures**

*Chaired by Xiaodong Cui (The University of Hong Kong)*

- 14:00 - 14:30 Resonantly enhanced moiré superlattice coupling in transition-metal dichalcogenide bilayers with almost matching band edges  
**Vladimir Fal'ko (National Graphene Institute, UK)**  
 14:30 - 15:00 Probing and Tuning Interlayer Interactions to Control Electronic and Photonic Properties of 2D Heterostructures  
**Chih-Kang Shih (The University of Texas at Austin)**  
 15:00 - 15:30 Low-energy Moiré Band Formed by Dirac Zero Modes in Twisted Bilayer Graphene  
**Long Zhang (University of Chinese Academy of Sciences)**  
 15:30 - 16:00 Tea Break

#### **Afternoon session 3: Quantum Magnetism**

*Chaired by Zidan Wang (The University of Hong Kong)*

- 16:00 - 16:30 Hidden  $\text{SU}(2)$  Symmetries, the Symmetry Hierarchy and the Emergent Eight-Fold Way in Spin-1 Quantum Magnets  
**Yi Zhou (Zhejiang University)**  
 16:30 - 17:00 Hidden order in a triangular lattice magnet  
**Jun Zhao (Fudan University)**  
 17:00 - 18:00 **Poster Session**

**Day 2 (January 8, Tuesday)**

08:30 - 09:00 Registration

**Morning session 4: Topological Materials I***Chaired by Qiang-Hua Wang (Nanjing University)*09:00 - 09:30 Experimental realization of the Fu-Kane proposal for topological quantum computation  
**Li Lu (Institute of Physics, Chinese Academy of Sciences)**09:30 - 10:00 Topological Classification of Quantum States of Bosons  
**Mahn-Soo Choi (Korea University, Korea)**10:00 - 10:30 New invariants, complete classification and fast diagnosis for topological crystalline insulators  
**Chen Fang (Institute of Physics, Chinese Academy of Sciences)**

10:30 - 11:00 Tea Break

**Morning session 5: Nonlinear Response of 2D Materials***Chaired by Sen Yang (The Chinese University of Hong Kong)*11:00 - 11:30 Symmetry and nonlinear responses in TMD nanostructures  
**Yoshihiro Iwasa (University of Tokyo & RIKEN)**11:30 - 12:00 Nonlinear optical response of massless Dirac fermions in graphene  
**Shiwei Wu (Fudan University)**

12:00 - 14:00 Lunch and Poster Session

**Afternoon session 6: Topological Materials II***Chaired by Sunny Xin Wang (City University of Hong Kong)*14:00 - 14:30 Intrinsic topological states in  $(\text{MnTe})_m(\text{Bi}_2\text{Te}_3)_n$  family materials  
**Jing Wang (Fudan University)**14:30 - 15:00 Bulk-boundary correspondence of non-Hermitian systems  
**Zhong Wang (Tsinghua University)**15:00 - 15:30 Anomalous Hall effect in topological matter with Kagome lattice  
**Hechang Lei (Renmin University of China)**

15:30 - 16:00 Tea Break

**Afternoon session 7: Classification of Correlated Topological Phases***Chaired by Chenjie Wang (The University of Hong Kong)*16:00 - 16:30 Classification and construction of symmetry protected topological (SPT) phases in interacting fermion systems  
**Zhengcheng Gu (The Chinese University of Hong Kong)**16:30 - 17:00 Symmetry-protected topological phases in (3+1) d with both spatial and internal symmetries  
**Peng Ye (Sun Yat-sen University)**17:00 - 17:30 Real-space recipes for general topological crystalline states  
**Yang Qi (Fudan University)**

18:00 - 22:00 Banquet

**Day 3 (January 9, Wednesday)**

08:30 - 09:00 Registration

**Morning session 8: Correlated and Topological Systems***Chaired by Junwei Liu (Hong Kong University of Science and Technology)*

09:00 - 09:30 Topological excitations in 1D and 2D charge density wave systems

**Han Woong Yeom (POSTECH, Korea)**

09:30 - 10:00 Large-scale numerical investigations of correlated electron systems, present and future

**Zi Yang Meng (Institute of Physics, Chinese Academy of Sciences)**

10:00 - 10:30 Machine Learning Many-Body Localization: Search for the Elusive nonergodic Metal

**Xiao Li (City University of Hong Kong)**

10:30 - 11:00 Tea Break

**Morning session 9: 2D Materials/Graphene***Chaired by DongKeun Ki (The University of Hong Kong)*

11:00 - 11:30 Proximity Josephson coupling in heterojunctions of 2D materials

**Hu-Jong Lee (POSTECH, Korea)**11:30 - 12:00 Strain induced Mott gap collapse in 1T-TaS<sub>2</sub>**Yi Yin (Zhejiang University)**

12:00 - 14:00 Lunch and Poster Session

**Afternoon session 10: Fractional Quantum Hall Effects***Chaired by Gang Chen (The University of Hong Kong)*14:00 - 14:30  $3/2$  Fractional Quantum Hall Plateau and Possible  $1/2$  Quantization of Fractional Quasi-particles**Xi Lin (Peking University)**

14:30 - 15:00 Interacting Flatland Electrons Never Stop Surprising

**Yang Liu (Peking University)**

15:00 - 15:20 Closing Speech, by Chenjie Wang (Conference chair)