

Controlling Low-dimensional Quantum System: A Confluence of Theory and Experiment

10/19 (Saturday)		
8:45 – 9:00 am	McKenna 215/216	Opening remark
9:00 – 9:50 am Chair: Hsing-Ta Chen (Notre Dame)	McKenna 215/216	Libai Huang (Purdue University) <i>Exciton Interactions and Quantum Transport</i>
9:50 – 10:20 am	McKenna 215/216	Contributed Talks 1. Bogdan Borodin <i>Launching Focused Phonon-Polariton Jets Via Hexagonal Boron Nitride Sub-Wavelength Resonators</i> 2. Shane Smolenski <i>Large Exciton Binding Energy in the Bulk van der Waals Magnet CrSBr</i>
10:20 – 10:40 am		Coffee break
10:40 – 11:30 am Chair: Xiaolong Liu (Notre Dame)	McKenna 215/216	Jiun-Haw Chu (University of Washington) <i>The Search and Realization of the Ideal Weyl Semimetal</i>
11:30 – 12:15 pm	McKenna 215/216	Contributed Talks 3. Mohamed El Gazzah <i>Engineering Topological Spin Textures in Kagome Metals</i> 4. Tongxie Zhang <i>Vapor-Liquid-Solid growth of metal chalcogenides nanowires</i> 5. Anna Nyary <i>Benchmarking stochasticity behind reproducibility: denoising strategies in Ta2O5 memristors</i>
12:15 – 1:45 pm	McKenna 205-207	Lunch/group photo
1:45 – 2:35 pm Chair: Edwin Huang (Notre Dame)	McKenna 215/216	Roel Tempelaar (Northwestern University) <i>Mixed quantum–classical modeling of quantum materials</i>
2:35 – 3:20 pm	McKenna 215/216	Contributed Talks 6. Suman Aich <i>Multiple tunable real-space degeneracies in graphene irradiated by twisted light</i> 7. Alex Krotz <i>Treating geometric phase effects in nonadiabatic dynamics</i> 8. Tzu-Chi Hsieh <i>Berry curvature-induced Nernst effect in superconducting state</i>
3:20 – 3:40 pm	McKenna	Coffee break
3:40 – 4:25 pm Chair: Yi-Ting Hsu (Notre Dame)	McKenna 215/216	Contributed Talks 9. Chunli Huang <i>Ferromagnetism, Paramagnons and Superconductivity in Lightly-Doped Multilayer Graphene</i> 10. Quan Le Thien <i>Quantum Sensing with Entangled Neutron: Goos-Hänchen Effect and Magnetic Materials</i>

		11. Ambuj Jain <i>2k_F density wave instability of Fermi liquid under Dual-Gated Screening: A Time-Dependent Hartree Fock Analysis</i>
4:25 – 8:00 pm	Jordan Galleria	Poster session/Dinner

10/20 (Sunday)		
8:45 – 9:35 am Chair: Hsing-Ta Chen (Notre Dame)	McKenna 215/216	Yuki Kobayashi (University of Michigan, Ann Arbor) <i>Ultrafast, ultraintense laser spectroscopy of van der Waals materials</i>
9:35 – 10:20 am	McKenna 215/216	Contributed Talks 12. James McKenzie <i>Deriving Material Properties from Error Signals in Scanning Tunneling Microscopy</i> 13. Bence Markus <i>Band Degeneracy Leads to Anomalous Spin-Dynamics in Graphite</i> 14. Nileema Sharma <i>Experimental simulation and visualization of molecular orbitals</i>
10:20 – 10:40 am	McKenna	Coffee break
10:40 – 11:30 am Chair: Petr Stepanov (Notre Dame)	McKenna 215/216	Jeanie Lau (Ohio State University) <i>Quantum Transport in 2D Superconductors and Semiconductors</i>
11:30 – 12:15 pm	McKenna 215/216	Contributed Talks 15. Mainak Das <i>Superpolarized Electron-Hole Liquid and Multiferroicity in Rhombohedral Pentalayer Graphene</i> 16. Guopeng Xu <i>Quantum Fluctuation and Dirac Sea Exchange-Driven Phase Transitions in Neutral Graphene</i> 17. Hyeok-Jun Yang <i>Competing superconductivity and magnetism in twisted transition metal dichalcogenide, WSe₂</i>
12:15 – 2:00 pm	McKenna 205-207	Lunch
2:00 – 2:50 pm Chair: Yi-Ting Hsu (Notre Dame)	McKenna 215/216	Taylor Hughes (University of Illinois, Urbana-Champaign) <i>Topological Crystalline Responses in Gapped and Gapless Systems</i>
2:50 – 3:35 pm	McKenna 215/216	Contributed Talks 18. Sarbajaya Kundu <i>CDMFT+HFD : an extension of dynamical mean field theory for non-local interactions applied to the single band extended Hubbard model</i> 19. Shih Chuan Lien <i>Interaction-induced topological phase transitions in fermionic and dipolar sectors</i> 20. Xiaohan Wan <i>Symmetry-based classification of exact flat bands in single and bilayer mo systems</i>
3:35 – 3:40 pm	McKenna 215	Closing remark

