

## Multi-Modal X-Ray Techniques for Emergent Quantum Materials

APS Users Meeting: Workshop 6: 2020 August 27<sup>th</sup> & 28<sup>th</sup>

	Speaker		Title
Thursday 8/27/2020			
9.00-9.30	Philip Ryan	APS	Welcome and General Overview
9.30-10.00	Jong-Woo Kim	APS	Iridates : Deploying our Tools
Break/ Open Discussion			
10.35-11.15	Prof. Susan Trolier-McKinstry	Penn. State University	Residual Stress and Ferroelastic Domain Reorientation in Declamped {001} Pb(Zr <sub>0.3</sub> Ti <sub>0.7</sub> )O <sub>3</sub> Films
11.15-11.55	Dr. Xiaoran Liu	Rutgers University	Emergent topological phenomena in (111) pyrochlore iridate thin films.
Lunch			
1.30- 2.10	Prof. Derek Meyers	Oklahoma State University	Magnetically and Electrically driven Phenomena in Complex Oxide Heterostructures
2.10-2.50	Prof. Mingda Li	MIT	Machine learning augmented scattering spectroscopy for emergent quantum materials
Break/ Free Discussion			
3.20-4.00	Prof. Jiun-Haw Chu	University of Washington	Probing the nematicity and superconductivity by the technique of elasto-XRD
4.00-4.40	Dr. Han Zhang	University of Tennessee	Multi-control and Multi-probe of the Metamagnetism in the Pseudospin half Mott Insulator Sr <sub>2</sub> IrO <sub>4</sub>
4.40-5.20	Thanh Nguyen	MIT	New class of Kohn anomalies in Weyl semimetals

Friday 8/28/2020

9.00-9.40	Prof. Jeremy Levy	University of Pittsburgh	One-Dimensional Quantum Simulation with LaAlO <sub>3</sub> /SrTiO <sub>3</sub> Nanostructures
9.40-10.00	Gilberto Fabbris	APS	Review of APS-U Impact
Break / Open Discussion			
10.35-11.15	Prof. Arun Bansil	Northeastern University	
11.15-11.55	Dr. Jiuen Kim	University of California Berkeley	A multi-modal approach to understanding structure-property relationships in relaxor ferroelectrics
Lunch			
1.30- 2.10	Prof. Dmitri Kharzeev	Stony Brook University	The chiral qubit: quantum computing with Dirac/Weyl semimetals
2.10-2.50	Dr. Wendy ZiChao Di	Argonne National Laboratory	Multi-modal-based optimization method for tomographic reconstruction.
Break Open Discussion			
3.20-4.00	Prof. Hyowon Park	University of Illinois, Chicago	Understanding strong correlations of quantum materials from first-principles.
4.00-4.40	Shua Sanchez	University of Washington	Tuning electronic and magnetic orders with strain and magnetic field
4.40-5.00	Philip Ryan	APS	Discussion and Wrap up