

Joint APS/CNM WK#3: Interpreting Hierarchical Data at Nanocenters and X-ray User Facilities

Tuesday, May 4, Morning

8:30 – 8:35 Welcome

8:35 – 8:50 Ilke Arslan (Center for Nanoscale Materials, Argonne National Laboratory)
Opening Remarks

Session 1

8:50 – 9:20 John Freeland (Advanced Photon Source, Argonne National Laboratory)
Buried by Data: My Experience Struggling with High Volumes of Complex X-ray Data

9:20 – 9:50 Wonsuk Cha (Advanced Photon Source, Argonne National Laboratory)
Bragg Coherent Diffractive Imaging at APS-U

9:50 – 10:20 Deyu Lu (Brookhaven National Laboratory)
Unraveling Local Chemical Environment from X-ray Absorption Spectroscopy Using Theory and Machine Learning

10:20 – 10:30 Break

Session 2

10:30 – 11:00 Xijie Wang (SLAC National Accelerator Laboratory)
Beyond Bragg Electron Diffraction: Connecting Electronic and Nuclear Dynamics with MeV-UED

11:00 – 11:30 Petro Maksymovych (Oak Ridge National Laboratory)
Navigating Disorder in Superconductors Using Atomic-scale Imaging and Machine Learning

11:30 – 12:00 Matthew Brahlek (Oak Ridge National Laboratory)
Crosscutting Synthesis with Advanced X-ray Characterization for a Deeper Understanding into Quantum Materials

12:00-1:00 Lunch Break

Tuesday, May 4, Afternoon

Session 3

1:00 – 1:30 Ian Robinson (Brookhaven National Laboratory)
Data-driven Phasing Algorithms for Bragg Coherent Diffractive Imaging

1:30 – 2:00 Jing Tao (Brookhaven National Laboratory)
*Concurrent Probing of Both Electron and Lattice Dynamics in CDW 1T-TaSeTe
Using MeV UED*

Session 4

2:00 – 2:30 Jianguo Wen (Center for Nanoscale Materials, Argonne National Laboratory)
Low-dose/High-speed Atomic Resolution TEM Imaging of Structural Dynamics

2:30 – 3:00 Daniel Dessau (University of Colorado)
Analysis of ARPES Data in Higher Dimensions

3:00 – 3:15 Break

Session 5

3:15 – 3:45 Shinjae Yoo (Brookhaven National Laboratory)
Toward Automated In Situ Beamline Analysis and Operation

3:45 – 4:15 Daniela Ushizima (Lawrence Berkeley National Laboratory)
Multimodal Multiscale Analysis of Biofuel Plants Using Machine Learning

4:15 – 4:45 Discussions

5:00 Workshop Adjourns