

AGENDA

Plenary Zoom Meeting link for Wed/Thur/Fri:

<https://stanford.zoom.us/j/97791810873?pwd=aVZ0Z3UvZURvT2VnREVjN2E4UC91QT09>

Breakout Zoom Session 1 Meeting link for Wed/Thurs:

<https://stanford.zoom.us/j/93705586066?pwd=b2JTY05weVYyUFYyRURxMGRIVy8rQT09>

Breakout Zoom Session 2 Meeting link for Wed/Thurs:

<https://stanford.zoom.us/j/92233042983?pwd=b25ubTIVQWhkTzcvNXhoV3RUSjZsQT09>

Day 1: Wednesday, December 9th, 2020 (PT)		
9:00 – 9:05	Nora Berrah and David Reis	Welcome
9:05 – 9:35	Panel to answer the community's technical questions: Agostino Marinelli (LCLS) Peter Walter, Andy Aquila (LCLS) James Cryan (PULSE/LCLS)	LCLS-II Capabilities: Multi-color, and Short Pulse Operations; LCLS-II Present and Future Instrumental Capabilities; Current Status of LCLS Attosecond and Non-linear Science
Invited Presentations. Moderator Nora Berrah		
9:35 – 9:45	Todd Martinez (Stanford/SLAC)	Important Questions to Address in Chemical Sciences
9:45-9:55	Roseanne Sension (UM)	Using X-ray Spectroscopies to Probe Coherent Structural Evolution
Discussion (15 min); Break 5 min		
10:15-10:25	Shaul Mukamel (UC, Irvine)	Probing Conical Intersections by Ultrafast X-ray Stimulated Raman and Diffraction
10:25-10:35	Dan Neumark (UCB-LBNL)	Attosecond Electron Dynamics in Molecules using Non-Linear Multidimensional Methodologies at LCLS-II
Discussion (15 min); Break 5 min		
11:00-12:30	Two Parallel Breakout Sessions (1&2): Slide Presentations and Discussions Chairs: J. Cryan, A. Cordones-Hahn, B. Schoenlein, T. Wolf, P. Bucksbaum D. Reis, N. Berrah	
12:30-1:00	Optional Virtual LCLS Tour. Guide Mike Glowntia	
Day 2: Thursday, December 10th, 2020 (PT)		
9:00	Invited Presentations. Moderator David Reis	
9:05-9:15	Mette Garde (LSU)	Spatiotemporal Reshaping of Intense X-ray Pulses in Atomic Gases
9:15-9:25	Steve Cundiff (UM)	Frequency-comb based Multidimensional Coherent Spectroscopy
9:25-9:35	Steve Pratt (ANL)	Inner-Shell Probes of Chemical Transformations
Discussion (20 min); Break 10 min		
10:05-10:15	Arthur Suits (MU)	Roaming Reactions, Vibronic Dynamics and Novel Manifestations of the Geometric Phase
10:25-10:35	Melanie Reber (UG)	Multidimensional Spectroscopy of Free Radicals and other Transient Species
10:35-10:45	Marcos Dantus (MSU)	Dynamics of Roaming and other Exotic Chemical Reactions following Interaction with Electrons or Photons with Energies Ranging from 100 to 1000 eV
Discussion (20 min); Break 10 min		
11:15-1:00	Two Parallel Breakout Sessions (1&2): Slide Presentations and Discussions Chairs: J. Cryan, A. Cordones-Hahn, B. Schoenlein, T. Wolf, P. Bucksbaum D. Reis, N. Berrah Please write up and send your ideas Thursday night for Friday's Wrap-Up	
Ultrashort Day 3: Friday, December 11th, 2020 (PT)		
9:00-11:00	Wrap-up-- Recommendations by the Community, report preparation, Close Out	

Nora Berrah (UConn), David Reis, James Cryan, Amy Cordones-Hahn, Bob Schoenlein (PULSE, LCLS, SLAC)

DAY 1: Wednesday December 9, 2020. Breakout Session 1-Amy Cordones-Hahn and Bob Schoenlein

Start	End	Name		Title
11:00	11:05	Aquila	Andrew	TXI the Home for Non-Linear at LCLS. Toward All-optical Single-Shot FROG
11:05	11:10	Peters	William	Measurements of XFEL Pulses.
11:10	11:15	Bergmann	Uwe	A Population Inversion X-ray Laser Oscillator.
11:15	11:30			Discussion Decipher Electron and Energy Flow in Solar Energy Conversion Process Using Two- dimensional Electronic and Vibrational Spectroscopy.
11:30	11:35	Chen	Lin	Nonheme Mononuclear Iron Enzymes: Nature's Versatile Biocatalysts.
11:35	11:40	Guo	Yisong	Excited State Structural Evolution.
11:40	11:45	Penner-Hahn	James	
11:45	12:00			Discussion Probing Buried Interfaces With Soft X-ray Second Harmonic Generation.
12:00	12:05	Drisdell	Walter	Monitoring Theremite Redox with Chemical Selectivity.
12:05	12:10	Mincigrucci	Riccardo	Charge and Energy Transfer Processes in Atomically Thin, 2D Interfaces.
12:10	12:15	Raja	Archana	
12:15	12:30			Discussion

Zoom link for breakout session 1, Wednesday Dec 9 2020

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DAY 1: Wednesday December 9, 2020. Breakout Session 2- James Cryan and Nora Berrah

Start	End	Name		Title
11:00	11:05	Haxton	Daniel	Decomposing a Signal from a Non-linear Laser Experiment into its Contributions from Each Number of Photons Absorbed and Emitted by Each Pulse.
11:05	11:10	Ogitsu	Tadashi	Computational Spectroscopy in Energy Conversion Technologies.
11:10	11:15	Tan	Liang	Theory and Simulation of Nonlinear Spectroscopies.
11:15	11:30			Discussion
11:30	11:35	Leone	Stephen	Coupled Electron-Proton Motion with Mixed-Frequency Multidimensional X-ray Spectroscopy.
11:35	11:40	Pfeifer	Thomas	Benchmarking Multidimensional Spectroscopy on Atoms with SASE FELs.
11:40	11:45	Driver	Taran	Spectral Domain Ghost Imaging: Overcoming both SASE Noise and the Fourier Limit at XFELs.
11:45	12:00			Discussion
12:00	12:05	Niranjan	Shivaram	Probing Attosecond X-ray Initiated Processes in Molecules via Non-linear Optical Measurements.
12:05	12:10	Slaughter	Dan	Ultrafast Transient Polarization Spectroscopy with X-rays as a Multidimensional Nonlinear Probe of Electronic and Nuclear Dynamics and Coherences.
12:10	12:15	Camacho	Abraham	Polarizability Effects in Extended Systems.
12:15	12:30			Discussion

Zoom link for breakout session 2, Wednesday Dec 9, 2020

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DAY 2: Thursday December 10th, 2020. Breakout session 1- David Reis and Bob Schoenlein

11:15	11:20	Guo	Jinghua	Coherent RIXS Probing the Coupling Between the Electronic Structure and Nuclear Motions of Molecules.
11:20	11:25	Lambeets	Sten	Tracking Cobalt Oxidation at the Atomic Scale Using In-situ and In-operando Atom Probe Microscopy Techniques.
11:25	11:30	Nibbering	Erik	TBD
11:30	11:45			Discussion
11:45	11:50	Nelson	Keith	2D multiple-quantum Signals are Awesome.
11:50	11:55	Svetina	Cristian	X-ray Transient Grating Spectroscopy.
11:55	12:00	PEMMARAJU	DAS	Ab-initio TDDFT Studies of Nonlinear X-ray Excitations in Solids.
12:00	12:15			Discussion
12:15	12:20	Gorelova	Daria	Imaging Electron Dynamics with Attosecond X-ray Pulses. Theory Perspective.
12:20	12:25	Fuchs	Matthias	Light-Induced Atomic-Scale charge dynamics.
12:25	12:30	Zuerch	Michael	Nonlinear X-ray Spectroscopy Providing New Opportunities for Research on Symmetry and Interfaces.
12:30	12:45			Discussion
12:45	12:50	Loe	Caroline	Tracking Intramolecular Proton Transfer with Multicolor X-rays.
12:50	13:00			Discussion and Wrap up

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DAY 2: Thursday December 10th, 2020. Breakout session 2- Phil Bucksbaum and Thomas Wolf

11:15	11:20	Marangos	Jonathan	Impulsive X-ray Raman in Liquids.
11:20	11:25	Oberli	Solène	Time-Dependent Quantum Model for Attosecond X-ray Non-Linear. Spectroscopy
11:25	11:30	O'Neal	Jordan	Electronic Population Transfer via Impulsive Stimulated X-Ray Raman Scattering with Attosecond Soft-X-Ray Pulses.
11:30	11:45			Discussion
11:45	11:50	Michelsen	Hope	Probing Particle Formation at High Temperatures.
11:50	11:55	Muhunthan	Priyanka	Examining the Supercritical Phase Transition Using X-ray Diagnostics.
11:55	12:00	Trebbin	Martin	Microfluidic Sample Injectors For XFEL Experiments.
12:00	12:15			Discussion
12:15	12:20	Makhij	Varun	Electronic Coherences in the Lab Frame.
				High-power Broadband/tunable Frequency Combs and Cavity-Enhancement Methods for Executing Comb-based Nonlinear Spectroscopy.
12:20	12:25	Allison	Thomas	Noise Suppression in Gas and Liquid Phase XUV Transient Absorption with HHG Sources.
12:25	12:30	Marroux	Hugo	
12:30	12:45			Discussion
				Two Dimensional Partial Covariance Mass Spectrometry for Structural Analysis of Large Biomolecules.
12:45	12:50	Averbukh	Vitali	
12:50	12:55	Frasinski	Leszek	Covariance Mapping of Large Biomolecules.
12:55	13:00			Discussion and Wrap up

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