



# 10th International Conference on Inelastic X-ray Scattering (IXS2017)

DESY Hamburg, 28. Aug. – 1. Sept 2017

## Conference Programme

(Status 21. August 2017)

### Monday, 28th August 2017

08:00 Registration open

08:30 **Welcome**

#### Session 1: Theory

09:00 **Inelastic X-ray Scattering, past, present and future.**

Chi-Chang Kao

09:45 t.b.d.

Tom Deveraux

10:30 Coffee break

10:50 **Incident-energy dependent spectral weight of resonant inelastic x-ray scattering in doped cuprates**

*Takami Tohyama*

11:25 **First-principles calculation of the phonon contribution to RIXS spectra via the cumulant expansion**

*Keith Gilmore*

11:40 **Recent developments in phonon theory and anharmonicity**

*Olle Hellman*

12:10 Poster Speed Talks: 60s per poster

13:10 Lunch and Posters

14:50 Focus Session 1: Theory (organized by Krzysztof Wohlfeld)

**RIXS spectra as a problem in many-body non-equilibrium dynamics**

*Eugene Demler*

**The anatomy of RIXS, what do we measure**

*Maurits Haverkort*

**Resonant inelastic x-ray scattering of magnons in excited systems**

*Michel van Veenendaal*

**Using RIXS to uncover elementary charge and spin excitations in correlated materials**

*Krzysztof Wohlfeld*

16:40 Coffee break

17:00 Focus Session 2: RIXS Instruments (organized by Ignace Jarrige)

**Veritas @ MAX IV**

*Marcus Agåker*

**Soft X-ray RIXS at the ESRF**

*Nick Brookes*

**Perspectives for RIXS at rare-earth N<sub>4,5</sub> edges**

*Sorin G. Chiuzbăian*

### **RIXS instrumentation at the ALS**

*Yi-De Chuang*

### **Getting the “t” into S(q,w,t): Dynamic pathways on multidimensional potential surfaces**

*Alexander Föhlisch*

### **High-Resolution and High-Efficiency RIXS using Active Gratings**

*Di- Jing Huang*

### **Status update of the SIX beamline at NSLS-II**

*Ignace Jarrige*

### **Upgrades and development of SX-RIXS end-station in SPring 8 BL07LSU**

*Jun Miyawaki*

### **Operation experience with the RIXSCam - the new EM-CCD camera for RIXS at the ADRESS beamline**

*Thorsten Schmitt*

### **The current status of Resonant Inelastic X-ray Scattering Beamline I21 at Diamond Light Source**

*Ke-Jin Zhou*

19:20 End of Day 1

## **Tuesday, 29th August 2017**

### **Session 2: Soft RIXS**

- 09:00 **Resonant Inelastic X-ray Scattering on Iron Pnictide Superconductors**  
*Thorsten Schmitt*
- 09:30 **The crossover from collective to incoherent spin-excitations in high-Tc cuprates probed by detuned Cu-L3 RIXS**  
*Matteo Minola*
- 09:50 **Orbital-selective Coulomb correlations across a spin-state and a metal-insulator transitions**  
*Jun Okamoto*
- 10:10 Coffee break  
Group photo
- 10:30 **Unraveling the crystal-field states of the strongly correlated topological insulator Sb<sub>2</sub>Te<sub>3</sub> using core-level non-resonant inelastic x-ray scattering**  
*Andrea Severing*
- 11:00 **Non-resonant inelastic X-ray scattering at high pressures**  
*Christoph Sahle*
- 11:30 **Single Crystal elasticity of bridgmanite under high-pressure conditions**  
*Hiroshi Fukui*
- 11:50 **Imaging of Co(3d) orbitals responsible for the 500K spin state transition in LaCoO<sub>3</sub> using X-ray Compton scattering**  
*Yoshiharu Sakurai*
- 12:10 Visit European XFEL, Schenefeld Site  
Lunch
- 14:40 Coffee break
- 15:00 **X-ray spectroscopy at extreme low and high brilliance**  
*Gyorgy Vanko*
- 15:30 **Elementary excitations in spin-chains studied with resonant inelastic x-ray scattering**  
*Justine Schlappa*

- 16:00 **Ultrafast x-ray scattering: what can ultrafast teach us that frequency-domain can't?**  
*Mariano Trigo*
- 16:30 **Hard x-ray split-delay optics for time-domain high-resolution x-ray spectroscopy with XFELs**  
*Tito Osaka*
- 16:50 Coffee break
- 17:05 Focus session 3: Crystal Analyzers (organized by Alfred Baron)
- High resolution spherical analysers at the ESRF**  
*Roberto VERBENI*
- Development of High-Energy-Resolution Spherical Quartz Analyzers for Resonant Inelastic X-ray Scattering (RIXS) at the Advanced Photon Source**  
*Ayman SAID*
- Sub-meV & 25 meV analyzers for non-resonant IXS at SPring-8**  
*Daisuke ISHIKAWA*
- New materials for high-resolution analyzers: sapphire and quartz**  
*Hasan YAVAS*
- Figured analyzers with alternative crystals for low energy X-ray spectroscopy**  
*Marcelo HONNICKE*
- Flat-Crystal Optics for Ultra-High Energy-Resolution Resonant Inelastic X-ray Scattering**  
*Thomas GOG*
- Development of quartz optics for high-resolution X-ray spectroscopy**  
*HUANG, Xianrong*
- Design and performance of the Montel-CDW analyzer of the ultrahigh resolution Inelastic X-ray Scattering (IXS) beamline at NSLS-II\***  
*Yong Cai*
- 19:25 Poster session  
Beer and Bretzel
- 21:30 End of Day 2

## Wednesday, 30th August 2017

### Session 3: NIXS and XES

- 08:30 **XES of liquid water at interfaces**  
*Yoshihisa Harada*
- 09:00 **Imaging of Co(3d) orbitals responsible for the 500K spin state transition in LaCoO<sub>3</sub> using X-ray Compton scattering**  
*Terrence Jach*
- 09:20 **Structure and energetics in supercooled water down to 255 K by means of non-resonant inelastic X-ray scattering**  
*Felix Lehmkuhler*
- 09:40 **Coordination-sensitive K $\beta$ '' crossover transition in germanium valence-to-core X-ray emission spectra: Evidence of germanium coordination >6 in compressed GeO<sub>2</sub> above 50 GPa**  
*Georg Spiekermann*

10:00 Coffee break

### Session 4: 5d Elements (1)

10:20 **Phonon spectroscopy at high x-ray energies and new insights into the physics of iridates via Nuclear Resonance Methods**

*H. C. Wille*

10:50 **Magnetic excitations and the role of spin-orbit coupling in 5d<sup>3</sup> osmates revealed with RIXS**

*Stuart Calder*

11:20 **Quartz-based flat-crystal resonant inelastic x-ray scattering spectrometer (RIXS) with sub 10 meV energy resolution**

*Jung Ho Kim*

11:50 Lunch and Poster

### Session 5: 5d Elements (2)

13:50 **Electronic and magnetic excitation spectra of pyrochlore Nd<sub>2</sub>Ir<sub>2</sub>O<sub>7</sub> probed with resonant inelastic x-ray scattering**

*Kentaro Ueda*

14:10 **The bond-dependent magnetic excitations of the quasi-one-dimensional CaIrO<sub>3</sub> revealed by resonant inelastic x-ray scattering**

*Matteo Rossi*

14:30 **Anisotropic intercalations opposing magnetocrystalline anisotropy in Sr<sub>3</sub>NiIrO<sub>6</sub>**

*Emilie Lefrancois*

14:50 **Lessons from Sr<sub>2</sub>IrO<sub>4</sub> for iridates : strong covalency and long-range interactions in the effective low energy Hamiltonian**

*Stefano Agrestini*

15:10 **Weak coupling theory of resonant inelastic x-ray scattering in layered iridates**

*Tatsuya Nagao*

15:30 Coffee break

### Session 6: Batteries and Fuel Cells

15:50 **Oxygen Redox in Li-Ion Battery Chemistries**

*Matthew Roberts*

16:20 **Local electronic states of Co–Fe Prussian blue analogues for Na-ion battery cathodes investigated by Co L-edge RIXS**

*Hideharu Niwa*

16:40 **Resonant inelastic soft X-ray scattering studies of cathode materials for Li batteries to clarify the redox reactions and charge-transfer effects**

*Daisuke Asakura*

17:00 **X-ray Raman scattering from La-Sr-Co-Fe-O for fuel cell technology**

*Chiara Cavallari*

17:20 Coffee break

### Session 7: Soft RIXS

17:40 **TBD**

*Nick Brookes*

18:10 **Precursor Charge Density Waves in La<sub>2-x</sub>Ba<sub>x</sub>CuO<sub>4</sub> Reveal Spin-Charge Unlocked Phase**

*Mark Dean*

18:40 **RIXS study of charge order in optimal- and overdoped (Bi,Pb)<sub>2</sub>(Sr,La)<sub>2</sub>CuO<sub>6+δ</sub>**

*Giacomo Ghiringhelli*

- 19:10 BBQ and Poster Session  
22:00 End of Day 3

## Thursday 31st August 2017

### Session 8: Instruments

- 08:40 **High resolution x-ray spectroscopy at SSRL and LCLS**  
*Dimosthenes Sokaras*
- 09:10 **A new x-ray emission spectrometer is now available at the CLÆSS beamline of the ALBA synchrotron**  
*Laura Simonelli*
- 09:30 **A Three Crystal X-ray Spectrometer and its Application at SSRF**  
*Yuying Huang*
- 09:50 **X-ray Echo Spectroscopy**  
*Yuri Shvydko*
- 10:15 Coffee break

### Session 9: 3d Elements

- 10:35 **Understanding the electronic structure of 3d-transition metal oxides with Resonant Inelastic X-ray Scattering**  
*Valentina Bisogni*
- 11:05 **Observation of a dispersive charge mode in hole-doped cuprates using resonant inelastic x-ray scattering at the oxygen K edge**  
*Kenji Ishii*
- 11:25 **RIXS study of charge order in optimal- and overdoped (Bi,Pb)<sub>2</sub>(Sr,La)<sub>2</sub>CuO<sub>6+δ</sub>**  
*Yingying Peng*
- 11:45 **Electronic structures of Fe oxides revealed by soft X-ray inelastic scattering**  
*Hsiao-Yu Huang*
- 12:05 Lunch

### Session 10: 4d Elements

- 13:30 **Probing the spin-orbit condensates and excitations by RIXS**  
*Giniyat Khaliullin*
- 14:00 **Intermediate x-ray energy RIXS at P01 DESY: Technical challenges and experimental opportunities**  
*Hlynur Gretarsson*
- 14:20 **X-ray and neutron scattering studies of alpha ruthenium trichloride**  
*Young-June Kim*
- 14:50 **Science at PETRA IV: Conditions and Opportunities**  
*Ralf Röhlsberger*
- 15:25 Coffee break

### Session 11: DLSR and future requirements

- 15:45 Peter Abbamonte
- 16:30 Simo Huotari
- 17:00 **Coherences to amplify inelastic X-ray scattering**  
*Martin Beye*
- 17:20 Arun Bansil

18:15 Departure Conference Dinner

19:00 Conference Dinner  
Boat trip and buffet

## Friday, 1st September 2017

### Session 12: Phonons

09:00 **Recent Results of Non-Resonant High-Resolution IXS at SPring-8**

*Alfred Baron*

09:40 **Exploring a new frontier: phonon propagation in complex and hybrid metamaterials**

*Alessandro Cunsolo*

10:10 **Phonon and phonon-like excitations in KNbO<sub>3</sub> and KTa<sub>0.65</sub>Nb<sub>0.35</sub>O<sub>3</sub>**

*Alexei Bosak*

10:30 **Charge Order in the Cuprates: Effect of pressure**

Matthieu leTacon

11:00 Coffee break

Poster Prize Talks

11:20 Poster Talk 1

11:35 Poster Talk 2

11:50 Poster Talk 3

12:05 Poster Talk 4

12:20 Concluding remarks

13:10 End of Conference

14:40 Visit PETRA III (P64, P01)