

# International Workshop on Photoionization & Resonant Inelastic X-ray Scattering IWP-RIXS 2017

Aussois, France

26<sup>th</sup> - 31<sup>st</sup> of March 2017

## Programme

### Sunday, March 26<sup>th</sup>

17:00 - 19:30     Registration

19:30 - 21:30     Welcome reception

### Monday, March 27<sup>th</sup>

08:30 - 08:45     Welcome

#### Session 1

FEL Non equilibrium matter

Chairperson: **Linda Young**

- 08:45 - 09:15     **Invited Talk**  
Stimulated X-ray Raman scattering in molecular targets – A critical study of the building block of coherent nonlinear X-ray spectroscopy  
**Nina Rohringer** - MPSD, Hamburg, Germany
- 09:15 - 09:45     **Invited Talk**  
Non-equilibrium Processes within X-Ray FEL Generated Plasmas  
**Beata Ziaja-Motyka** - CFEL DESY, Hamburg, Germany
- 09:45 - 10:15     **Invited Talk**  
Femtosecond response of polyatomic molecules to intense soft and hard X-rays  
**Rebecca Boll** - DESY, Hamburg, Germany
- 10:15 - 10:45     Coffee break

#### Session 2

Atto and Ultra-fast processes

Chairperson: **Nina Rohringer**

- 10:45 - 11:15     **Invited Talk**  
Attosecond dynamics through Fano resonances  
**Fernando Martin** - Universidad Autónoma de Madrid, Spain
- 11:15 - 11:45     **Invited Talk**  
Observing atoms and molecules change their shape in short and strong laser fields  
**Thomas Pfeiffer** - MPIK, Heidelberg, Germany

11:45 - 12:15 **Invited Talk**  
Tracking in real-time attosecond inelastic scattering in dielectrics  
**Francesca Calegari** - CNR-IFN, Milano, Italy

12:15 - 12:45 **Invited Talk**  
Attosecond electron dynamics in molecules and liquids  
**Hans-Jacob Wörner** - ETH, Zürich, Switzerland

13:00 - 14:30 *Lunch*

### **Session 3**

RIXS 1

Chairperson: **Yoshihisa Harada**

14:30 - 15:00 **Invited Talk**  
Mapping potential energy surfaces and dynamics around selected atoms with RIXS  
**Alexander Föhlisch** - BESSY, Berlin, Germany

15:00 - 15:30 **Invited Talk**  
Symmetry breaking in soft X-ray resonant inelastic scattering on molecules  
**Jan-Erik Rubensson** - Uppsala University, Sweden

15:30 - 16:00 **Invited Talk**  
Electron and nuclear dynamics in deeply core-excited molecules  
**Tatiana Marchenko** - UPMC, Paris, France

16:00 - 16:20 Theory of RIXS of water  
**Faris Gel'mukhanov** - KTH Stockholm, Sweden

16:20 - 16:40 Excited state proton transfer in aqueous 2-mercaptopyridine studied with RIXS  
**Jesper Norell** - Stockholm University, Sweden

16:40 - 17:00 *Coffee break*

17:00 - 19:00 *Poster Session*

20:00 - *Dinner*

## **Tuesday, March 28<sup>th</sup>**

### **Session 4**

Chirality and Exotic polarization

Chairperson: **Kiyoshi Ueda**

08:30 - 09:00 **Invited Talk**  
Photoelectron circular dichroism measured by multiphoton ionization  
**Thomas Baumert** - Kassel University, Germany

09:00 - 09:30 **Invited Talk**  
Toward femtochemistry with circularly polarized pulses  
**Valérie Blanchet** - CELIA, Bordeaux, France

09:30 - 09:50 Bi-elliptical high-harmonic spectroscopy as a probe of matter: From atomic orbitals to chiral molecules  
**Denitsa Baykusheva** - ETH Zurich, Switzerland

09:50 - 10:10 Complete polarization state of high order harmonics generated from bicircular counter-rotating  $\omega$  and  $2\omega$  fields and probed by molecular frame photoemission  
**Danielle Doweck** – ISMO, Orsay, France

10:10 - 10:30    *Coffee break*

10:30 - 16:30    *Ski or Snowshoes*

16:30 - 17:00    *Coffee break*

### Session 5

Multielectron processes

Chairperson: **Steve Manson**

17:00 - 17:30    **Invited Talk**

Photoionization as probe of dynamical processes

**Piero Decleva** - *Università di Trieste, Italy*

17:30 - 18:00    **Invited Talk**

$K^{-2}V$ : A new spectroscopic tool

**Stéphane Carniato** - *LCPMR, CNRS & UPMC, Paris, France*

18:00 - 18:30    **Invited Talk**

Multiple inner shell vacancies and collective Auger decay processes

**Raimund Feifel**, *Gothenburg University, Sweden*

18:30 - 18:50

Hybrid basis close-coupling interface to quantum chemistry packages for the treatment of ionization problems

**Markus Klinker** - *Universidad Autónoma de Madrid, Spain*

18:50 - 19:10

Multi electron spectroscopy: Auger decays of the rubidium 3d hole

**Jérôme Palaudoux** – *LCPMR, CNRS & UPMC, Paris, France*

20:00

*Savoyard Dinner*

## Wednesday, March 29<sup>th</sup>

### Session 6

ICD et clusters

Chairperson: **Arnaldo Naves de Brito**

08:30 - 09:00

**Invited Talk**

Multicoincidence studies of molecular photoionization – Entanglement and wavefunction imaging

**Reinhard Dörner** - *Frankfurt University, Germany*

09:00 - 09:30

**Invited Talk**

ICD and ICD cascades in multiply excited clusters

**Alexander I. Kuleff** - *Heidelberg University, Germany*

09:30 - 09:50

On the computations of decay widths of Fano resonances

**Tsveta Miteva** – *LCPMR, CNRS & UPMC, Paris, France*

09:50 - 10:10

Size-resolved photoemission anisotropies of neutral water clusters and predictions for liquid water

**Sebastian Hartweg** - *ETH Zurich, Switzerland*

10:10 - 10:40

*Coffee break*

## Session 7

Liquid jets

Chairperson: **Paul Morin**

- 10:40 - 11:10 **Invited Talk**  
Local and non-local electronic and nuclear relaxation processes in aqueous solutions  
**Bernd Winter** - Fritz-Haber-Institut, Berlin, Germany
- 11:10 - 11:40 **Invited Talk**  
A superficial look at water  
**Olle Björneholm** - Uppsala University, Sweden
- 11:40 - 12:10 **Invited Talk**  
From distillation to biomolecules in aqueous surface: Revelations from electron spectroscopy  
**Arnaldo Naves de Brito** - UNICAMP, Campinas, Brazil
- 12:10 - 12:30 High energy photoemission as a probe of ultrafast charge transfer in KCl aqueous solution  
**Denis Céolin** – Synchrotron SOLEIL, Gif-sur-Yvette, France
- 12:30 - 12:50 Optical luminescence from liquid water after excitation with Synchrotron Radiation  
**Christian Ozga** - Kassel University, Germany
- 13:00 - 14:30 *Lunch*

## Session 8

Chemistry and Nanosystems

Chairperson: **Fernando Martin**

- 14:30 - 15:00 **Invited Talk**  
Capturing the fastest charge and spin dynamics in nanosystems using high harmonic beams  
**Margaret Murnane** - JILA, Boulder, USA
- 15:00 - 15:30 **Invited Talk**  
Ultrafast non equilibrium dynamics induced by attopulses  
**Françoise Remacle** - Liège University, Belgium
- 15:30 - 16:00 **Invited Talk**  
Double imaging coincidences techniques for product determination in gas phase complex mixtures  
**Gustavo Garcia** - Synchrotron SOLEIL, Gif-sur-Yvette, France
- 16:0 - 16:20 Isolated nanoparticles' surfaces and interfaces probed by soft X-ray photoelectron spectroscopy  
**Mina Patanen** - University of Oulu, Finland
- 16:20 - 16:40 Selective dissociation upon core-electronic excitation in unsaturated hydrocarbons  
**Shabnam Oghbaie** - Lund University, Sweden
- 16:40 - 17:00 *Coffee break*
- 17:00 - 19:00 *Poster Session*
- 20:00 - *Dinner*

**Thursday, March 30<sup>th</sup>**

**Session 9**

Atto and Ultra-fast processes 2

Chairperson: **Matjaž Žitnik**

- 08:30 - 09:00 **Invited Talk**  
Photoionization dynamics: Transition and scattering delays  
**Richard Taïeb** - UPMC, Paris, France
- 09:00 - 09:20 **Invited Talk**  
What can we learn from electronic-state lifetime interference in atoms and molecules?  
**Ralph Püttner** - Berlin University, Germany
- 09:20 - 09:40 Photodamage and photostability of halogenated uracils under XUV HH radiation  
**Raluca Cireasa** – ISMO, Orsay, France
- 09:40 - 10:00 Attosecond interferometry with self-amplified spontaneous emission of a free-electron laser  
**Tim Laarmann** – DESY, Hamburg, Germany
- 10:00 - 10:20 Role of electron-nuclear coupled dynamics on charge migration induced by attosecond pulses in glycine  
**Manuel Lara-Astiaso** - Universidad Autónoma de Madrid, Spain
- 10:20 - 10:40 *Coffee break*
- 10:40 - 16:30 Ski or visit of “Haute-Maurienne” village
- 16:30 - 17:00 *Coffee break*

**Session 10**

RIXS 2

Chairperson: **Alexander Föhlisch**

- 17:00 - 17:30 **Invited Talk**  
X-ray Raman spectroscopy  
**Simo Huotari** - Helsinki University, Finland
- 17:30 - 18:00 **Invited Talk**  
Interference effects in high-resolution X-ray spectra  
**Matjaž Žitnik** - Jožef Stefan Institute, Ljubljana, Slovenia
- 18:00 - 18:30 **Invited Talk**  
Soft X-ray experiments of samples under atmospheric pressure: X-ray emission studies of liquids, solutions, gases and interfaces at SPring-8 BL17SU  
**Takashi Tokushima** - RIKEN, Saitama, Japan
- 18:30 - 18:50 Probing the trans-and Cis-isomerization of azobenzene with RIXS  
**Zhong Yin** - Max Planck Institute, Göttingen, Germany
- 18:50 - 19:10 *Hydrogen-bonding network of water confined in a polyelectrolyte brush*  
**Kosuke Yamazoe** - University of Tokyo, Japan
- 20:00 - *Conference Dinner & Best poster award (sponsored by Elsevier)*

**Friday, March 31<sup>st</sup>**

**Session 11**

Ions

Chairperson: **Maria Novella Piancastelli**

- 08:30 - 09:00 **Invited Talk**  
Multi-electron electron effects in inner-shell ionization of ions  
**Stefan Schippers** - *Giessen University, Germany*
- 09:00 - 09:30 **Invited Talk**  
One- and two-color photoionization of atomic ions formed within an intense free-electron laser pulse  
**Michael Meyer** - *XFEL, Hamburg, Germany*
- 09:30 - 10:00 **Invited Talk**  
Photoionization of ions stored in traps : From small carbonated systems to large biopolymers  
**Alexandre Giuliani** - *INRA, Nantes / Synchrotron SOLEIL, Gif-sur-Yvette, France*
- 10:00 - 10:20 Dissociation dynamics of energy-selected methyl halide ions ( $\text{CH}_3\text{X}^+$ , X=F, Cl, Br) investigated by Synchrotron photoelectron photoion coincidences  
**Xiaofeng Tang** - *Chinese Academy of Sciences, Hefei, China*
- 10:20 - 10:50 *Coffee break*

**Session 12**

FEL multiphoton

Chairperson: **John Bozek**

- 10:50 - 11:20 **Invited Talk**  
Coherent control experiments with the fully coherent free electron laser FERMI  
**Kevin Prince** - *Elettra, Trieste, Italy*
- 11:20 - 11:50 **Invited Talk**  
Hard X-ray photonics with intense X-ray laser pulses  
**Hitoki Yoneda** - *University of Electro-Communications, Tokyo, Japan*
- 11:50 - 12:20 **Invited Talk**  
X-ray pump -- X-ray probe spectroscopy  
**Antonio Picón** - *ANL, Argonne, USA*
- 12:20 - 12:40 Molecular femtodynamics at FERMI  
**Maria Novella Piancastelli** - *LCPMR, CNRS & UPMC, Paris, France / Uppsala University, Sweden*
- 12:40 - 13:00 Control of  $\text{H}_2$  dissociative ionization in the non-linear regime using EUV femtosecond pulses @ FERMI  
**Fabian Holzmeier** – *ISMO, Orsay / Synchrotron SOLEIL, Gif-sur-Yvette, France*
- 13:00 - *Lunch and Departure*