



ECAMP14

**14th European
Conference on Atoms
Molecules and Photons**

June 27-July 1, 2022



VILNIUS, LITHUANIA

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Conference program

(INV) - invited talk (25 + 5 minutes)
(HT) - hot topics talk (12 + 3 minutes)

Sunday, June 26

Hall: Alfa

15:00-19:00	Registration “Radisson Blu hotel Lietuva” conference center
16:30-18:30	Walking city tour (meeting point “Radisson Blu hotel Lietuva” lobby)

Monday, June 27

Hall: Alfa

8:00-9:00	Registration and welcome coffee
9:00-9:15	Welcome greetings (Hall Alfa)

Plenary Lecture 1 Chair: Joachim Burgdörfer

Hall: Alfa

9:15-10:00	Light driven ionization processes ... and the role of the photon's momentum	Reinhard Dörner Germany (Plen-1)
10:00-10:30	Coffee break	

Parallel session (A1) Chair: Reinhard Dörner		
Hall: Alfa		
Invited speakers:		
10:30-11:00	First instants following XUV photoionization: attosecond and femtosecond dynamics in molecules, from carbon structures to proteins	Franck Lépine, France (A1-1-INV)
11:00-11:30	Ultrafast spectroscopy of bio-chromophores with few-femtosecond UV pulses	Rocío Borrego Varillas, Italy (A1-2-INV)
11:30-12:00	All-XUV-Optical Nonlinear Absorption Spectroscopy with Free-Electron Lasers	Christian Ott, Germany (A1-3-INV)
12:00-12:30	Attosecond science at the Linac Coherent Light Source: recent developments and future directions	Agostino Marinelli, USA (A1-4-INV)
Parallel session (B1) Chair: Károly Tőkési		
Hall: Beta		
Invited speakers:		
10:30-11:00	Highly charged ions interacting with 2D materials	Marika Schleberger, Germany (B2-1-INV)
11:00-11:30	Interaction of trapped atoms with twisted light	Andrey Surzhykov Germany (B2-2-INV)
11:30-12:00	Probing charge-transfer neutralization reactions of atmospheric importance using the ion storage facility DESIREE	Richard Thomas, Sweden (B2-3-INV)
12:00-12:30	Experimental Studies of Nonperturbative Dynamics in Heavy-Ion-Atom Collisions	Pierre-Michel Hillenbrand, Germany (B2-4-INV)
12:30-14:15 Lunch break		
Plenary Lecture 2 Chair: Rosario González-Férez		
Hall: Alfa		
14:15-15:00	Quantum gases of ultracold polar molecules	Silke Ospelkaus-Schwarzer, Germany (Plen-2)
15:00-15:30 Coffee break		
Parallel session (A2) Chair: Silke Ospelkaus-Schwarzer		
Hall: Alfa		
Invited speakers:		
15:30-16:00	Ultracold RbCs Molecules: Robust Storage Qubits and Rotationally Magic Traps	Simon L. Cornish, UK (A2-1-INV)
16:00-16:30	Self-Pinning Transition of a Tonks-Girardeau Gas in a Bose-Einstein Condensate	Thomas Busch Japan (A2-2-INV)
16:30-17:00	Cristiane Morais Smith	Cristiane Morais-Smith, The Netherlands (A2-3-INV)
Hot topics:		
17:00-17:15	A Weakly-Interacting Many-Body System of Rydberg Polaritons based on Electromagnetically Induced Transparency	Ite A. Yu, Taiwan (A2-1-HT)
17:15-17:30	Response of Small Helium Clusters to Strong Laser Fields	Maksim Kunitski, Germany (A2-2-HT)
Parallel session (B2) Chair: Darius Abramavičius		
Hall: Beta		
Invited speakers:		
15:30-16:00	Absolute Measurement of a THz Transition Frequency Referenced to a Magnetic Dipolar Transition in Ca ⁺ ion	Caroline Champenois, France (B2-1-INV)
16:00-16:30	Extending coherent multidimensional spectroscopy to new target systems and new light sources	Lukas Bruder, Germany (B2-2-INV)
16:30-17:00	Terahertz Frequency	Luigi Consolino, Italy (B2-3-INV)
Hot topics:		
17:00-17:15	Quantitative Study of Enantiomer-Specific State Transfer	Johannes Bischoff, German (B2-1-HT)
17:15-17:30	K-LL Auger Decay of Doubly Excited States of Argon	Matjaz Žitnik, Slovenia (B2-2-HT)
17:30-19:15 Poster session 1 and coffee break		
19:15-21:30	Welcome Party	

Tuesday, June 28

Hall: Alfa

8:00-9:00 Registration and welcome coffee

Plenary Lecture 3 Chair: Gediminas Juzeliūnas

Hall: Alfa

9:00-9:45	Attoscience and Quantum Information	Maciej Lewenstein, Spain (Plen-3)
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9:45-10:15 Coffee break

Parallel session (A3) Chair: Wen-Te Liao

Hall: Alfa

Invited speakers:

10:15-10:45	Molecular polaritonics and subwavelength cavity QED	Johannes Feist, Spain (A3-1-INV)
10:45-11:15	New Perspectives on Quantum Geometry, Super-conductivity and Bose-Einstein Condensation	Päivi Törmä, Finland (A3-2-INV)
11:15-11:45	Quantum light-induced nonadiabaticity in molecular systems	Agnes Vibok, Hungary (A3-3-INV)
11:45-12:15	A fresh perspective on the Casimir effect	Almut Beige, United Kingdom (A3-4-INV)

Parallel session (B3) Chair: Marika Schleberger

Hall: Beta

Invited speakers:

10:15-10:45	Spectroscopy of helium-tagged molecular ions	Elisabeth Gruber, Austria (B3-1-INV)
10:45-11:15	Environmental Effects on Electron Attachment	Jaroslav Kočíšek, Czech Republic (B3-2-INV)
11:15-11:45	Charge migration in betaine by impact of fast atomic ions	Patrick Rousseau, France (B3-3-INV)
11:45-12:15	Ultrafast Processes in Amino-Acids, Amino-Acids Derivatives and Clusters of Amino-Acids Induced by Ionizing Radiation	Sergio Diaz-Tendero, Spain (B3-4-INV)

12:15-14:00 Lunch break

Plenary Lecture 4 Chair: Daniela Rupp

Hall: Alfa

14:00-14:45	Probing Nuclear Dynamics with Electron Scattering	Juraj Fedor, Czech Republic (Plen-4)
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14:45-15:15 Coffee break

Parallel session (A4) Chair: Agnes Vibok

Hall: Alfa

Invited speakers:

15:15-15:45	High Resolution Resonant Auger Spectroscopy of Ultrafast-decaying. Core-ionized Atoms	Tommaso Mazza, Germany (A4-1-INV)
15:45-16:15	Attosecond Science at the FERMI Free Electron Laser	Carlo Callegari, Italy (A4-2-INV)
16:15-16:45	Two-Color X-Ray Pump-Probe Spectroscopy at SwissFEL	Kirsten Andrea Schnorr, Switzerland (A4-3-INV)
Hot topics:		
16:45-17:00	Anisotropic dynamics of two-photon ionization: real time imaging of photoemission	Jérémie Caillat, France (A4-1-HT)
17:00-17:15	Rabi Dynamics Driven by a Seeded FEL at XUV-wavelengths	Mattias Bertolino, Sweden (A4-2-HT)

Parallel session (B4) Chair: Krzysztof Sacha

Hall: Beta

Hot topics:

15:15-15:30	Wave-packet dynamic in a SU(2) non-Abelian Gauge field	Wilkowski David, Singapore (B4-1-HT)
15:30-15:45	Quantum fluids of light in hot atomic vapors	Tangui Aladjidi, France (B4-2-HT)
15:45-16:00	Manifestation of relative phases in collision of BoseBose droplets	Mariusz Gajda, Poland (B4-3-HT)

16:00-16:15	Precision Measurements and Pauli Blocking with Quantum Degenerate Metastable ^3He	Yuri van der Werf, The Netherlands (B4-4-HT)
Invited speakers		
16:15-16:45	Non-equilibrium state preparation in driven-dissipative atomic quantum gases	André Eckardt, Germany (B4-1-INV)
16:45-17:15	Synthetic Gauge Fields with Ultracold Atoms	Monika Aidelsburger, Germany (B4-2-INV)
17:10-19:00 Poster session 2 and coffee break		
Public lecture Chair: Gediminas Juzeliūnas Hall: Alfa		
19:15	Time, Einstein and the coolest stuff in the universe	William Phillips, USA (Pub-Lect-1)

Wednesday, June 29

8:00-9:00	Registration and welcome coffee		
Plenary Lecture 5 Chair: Francesco Saverio Cataliotti Cataliotti			
Hall: Alfa			
9:00-9:45	Dynamically symmetry breaking in a bipartate optical lattice	Ian B. Spielman, USA (Plen-5)	
9:45-10:35	CONFERENCE PHOTO Coffee break		
Young Scientist Prize Lecture Chairs: Maciej Lewenstein, Joachim Burgdörfer			
Hall: Alfa			
10:35-11:30	Young Scientist Prize Award Ceremony and Lecture by Jordi Tura i Brugués “ Detecting Bell correlations in quantum many-body systems”	Jordi Tura i Brugués, The Netherlands (Plen-6)	
11:30-12:05	AMOPD General Assembly		
12:05-12:45	EGAS General Assembly		
12:45-14:00	Lunch		
14:00	Option 1: Tour to Trakai Castle; Option 2: Visit to Laser company “Light conversion” and Labs of Dept. Phys. of Vilnius university; Meeting point: Radisson Blu hotel lobby (1st floor)		
19:30	Conference dinner 19:15 Busses will leave Radisson BLU hotel, meeting point hotel lobby (1st floor)		

Thursday, June 30

8:00-9:00	Registration and welcome coffee	
Plenary Lecture 7 Chair: Hélène Perrin Hall: Alfa		
9:00-9:45	Spatiotemporal Control of Brain Function Using Holographic	Valentina Emiliani, France (Plen-7)
9:45-10:15	Coffee break	
Parallel session (A5) Chair: Christophe Blondel Hall: Alfa		
Invited Speakers:		
10:15-10:45	Probing of the ground-state atomic alignment-to-orientation conversion in an external magnetic field with different polarizations of the probe beam	Marcis Auzinsh, Latvia (A5-1-INV)
10:45-11:15	Dual Comb Spectroscopy for Electronic Fingerprinting	Birgitta Schultze-Bernhardt, Austria (A5-2-INV)
11:15-11:45	Cavity mode-dispersion spectroscopy	Roman Ciurylo, Poland (A5-3-INV)
11:45-12:15	A Decade with Quantum Biology: How Non-Trivial is Quantum Mechanics of Photosynthetic Light-Harvesting?	Tomáš Mančal, Czech Republic (A5-4-INV)

Hot topic:		
12:15-12:30	Reversing time with ultra-cold atoms for quantum undo operations	Ivana Mastroserio, Italy (A5-1-HT)
Parallel session (B5) Chair: Mikhail Ivanov		
Hall: Beta		
Invited Speakers:		
10:15-10:45	Towards attosecond imaging at the nanoscale using extreme ultraviolet high harmonic sources	Jan Rothhardt, Germany (B5-1-INV)
10:45-11:15	Influence of Shape Resonances on the Angular Dependence of Molecular Photoionization Delay	Fabian Holzmeier, France (B5-2-INV)
11:15-11:45	Tightly-Focused Elliptically Polarized Light: a Highly Efficient Tool for Chiral Discrimination	Laura Rego, UK (B5-3-INV)
11:45-12:00	Observing the complex dynamics in uracil via simulated XUV spectra	Lena Bäuml, Germany (B5-4-INV)
Hot topic:		
12:00-12:15	Sub-cycle Optical Pulses Generated via Parallel Parametric Waveform Synthesis for Attosecond Science	Roland E. Mainz, Germany (B5-1-HT)
12:30-14:00 Lunch break		
Plenary Lecture 8 Chair: Franck Lépine		
Hall: Alfa		
14:00-14:45	Atomic Physics at FAIR: Quantum Dynamics in Extreme Electromagnetic Fields	Thomas Stöhlker, Germany (Plen-8)
14:45-15:15 Coffee break		
Parallel session (A6) Chair: Thomas Stöhlker		
Hall: Alfa		
Invited Speakers:		
15:15-15:45	Studies of reactive and inelastic collisions in a cryogenic multipole trap	Robert Wild, Austria (A6-1-INV)
15:45-16:15	TBA	Marjan Mirahmadi, Germany (A6-2-INV)
16:15-16:45	X-rays from the Universe	Jörn Wilms, Germany (A6-3-INV)
Hot topics:		
16:45-17:00	A Levitating Droplet as a Toy Atom	Javier Tello Marmolej Sweden (A6-1-HT)
17:00-17:15	Experimental study of X-ray photon-induced desorption from molecular ices: indirect mechanism and astrophysical implications	Romain Basalgète, France (A6-2-HT)
Parallel session (B6) Chair: Karolina Słowik		
Hall: Beta		
Invited Speaker:		
15:15-15:45	Nonlinear optical phenomena from high repetition rate laser-matter interactions in transparent solids	Audrius Dubietis, Lithuania (B6-1-INV)
Hot topics:		
15:45-16:00	High-resolution manipulation and imaging of cold atoms through a multimode fiber	Sébastien Garcia, France (B6-1-HT)
16:00-16:15	Partial cross sections for mutual neutralization involving H ⁺ and D ⁺	Arnaud Dochain, Belgium (B6-2-HT)
Invited Speaker:		
16:15-16:45	The Fate of Knockout- Damaged PAHs and Fullerenes: Bridging Ultrashort and Ultralong Timescales	Michael Gatchell, Sweden (B6-2-INV)
Hot topics:		
16:45-17:00	Progress towards a molecular lattice clock to search for time-variation of the proton-to-electron mass ratio	Jonas Rodewald, UK (B6-3-HT)
17:00-17:15	The origin of enhanced O ₂ ⁺ + production from photoionized CO ₂ clusters	Smita Ganguly, Sweden (B6-4-HT)
17:15-19:00 Poster session 3 and coffee break		

Friday, July 1

Hall: Alfa

8:00-9:00 Registration and welcome coffee

Plenary Lecture 9 Chair: Alicia Palacios

Hall: Alfa

9:00-9:45	Lightwave Electronics in Trivial, Topological, and Strongly Correlated Solids	Mikhail Ivanov, Germany (Plen-9)
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9:45-10:15 Coffee break

Parallel session (A7) Chair: Almut Beige

Hall: Alfa

Invited speakers:

10:15-10:45	Realizing a topological gauge theory in an optically dressed Bose-Einstein condensate	Leticia Tarruell, Spain (A7-1-INV)
10:45-11:15	Speeding up a trapped ion quantum processor via Rydberg interaction	Markus Hennrich, Sweden (A7-2-INV)
11:15-11:45	Mott-squeezed states with ultra-cold fermions	Emilia Witkowska, Poland (A7-3-INV)
11:45-12:15	Rydberg molecules : spectra and scattering properties	Shuhei Yoshida, Austria (A7-4-INV)

Parallel session (B7) Chair: Hélène Perrin

Hall: Beta

Invited speakers:

10:15-10:45	Accurate determination of the fine-structure constant using atom interferometry	Saida Guellati-Khélifa, France (B7-1-INV)
10:45-11:15	Ultrastable frequency transfer through optical fiber links at the continental scale	Anne Amy-Klein, France (B7-2-INV)
11:15-11:45	Towards stimulated decay of antihydrogen atoms	Chloé Malbrunot, Switzerland (B7-3-INV)
11:45-12:15	An Apparatus for the Production of Squeezed Momentum State Superpositions in Atom Interferometers	Leonardo Salvi, Italy (B7-4-INV)

12:15-14:00 Lunch break

Parallel session (A8) Chair: Mažena Mackoit-Sinkevičienė

Hall: Alfa

14:00-15:30	EPS Young Minds Session	
14:00-14:20	The European Research Council - funding opportunities for bright minds	Christian Oswald, Belgium (A8-1-YMS)
14:20-14:40	Hybrid GaSb/Si spectroscopic sensing technology as a generic technology platform for next-generation IoT and health applications	Augustinas Vizbaras, Lithuania (A8-2-YMS)
14:40-15:00	Career Opportunities in the Scientific and Industrial Laser Technologies	Gediminas Račiukaitis, Lithuania (A8-3-YMS)
15:00-15:20	Discover Modern Trends in Optoelectronics Research at FTMC: Materials, Technology and Applications for Terahertz Photonics	Gintaras Valušis, Lithuania (A8-4-YMS)
15:30	Closing	

Parallel session (B8) Chair: Gediminas Gaigalas

Hall: Beta

Invited speakers:

14:00-14:30	TBA	Sangeeta Sharma, Germany (B8-1-INV)
Hot topic:		
14:30-14:45	Magnetometry with a nanometric-thin K vapor cell	Rodolphe Momier, France (B8-1-HT)

Invited speaker:

14:45-15:15	Recent Developments of NIST Atomic Databases and Online Tools	Yuri Ralchenko, USA (B8-2-INV)
Hot topic:		
15:15-15:30	Competitive Dehydrogenation and Backbone Fragmentation of Super-Hydrogenated PAHs	Mark Stockett, Sweden (B8-2-HT)

15:30-16:00 Coffee break

Closing ceremony; Concert by Petras Vyšniauskas (saxophone) and Aleksandra Žvirblytė (piano) in Hall Alfa

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