

28th International Laser Physics Workshop (LPHYS'19)

July 8–12, 2019, Gyeongju, South Korea

PROGRAM



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June 30, 2019

Dear Participant,

The Organizing and Steering committees of the 28th International Laser Physics Workshop welcome you to Gyeongju. This Workshop Program was generated automatically by our Laser Physics Portal on June 30, 2019. The current version of the Program you may find on the workshop pages: www.lasphys.com/workshops/lasphys19/

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Background

The 28th annual International Laser Physics Workshop (LPHYS'19) is being held from July 8 to July 12, 2019 in the city of Gyeongju, South Korea, at the Hwabaek International Convention Center (HICO), hosted by the Pohang University of Science and Technology (POSTECH).

LPHYS'19 continues a series of Workshops held in Dubna 1992, Dubna/Volga river tour 1993, New York 1994, Moscow/Volga river tour (jointly with NATO SILAP Workshop) 1995, Moscow 1996, Prague 1997, Berlin 1998, Budapest 1999, Bordeaux 2000, Moscow 2001, Bratislava 2002, Hamburg 2003, Trieste 2004, Kyoto 2005, Lausanne 2006, León (Mexico) 2007, Trondheim 2008, Barcelona 2009, Foz do Iguaçu 2010 (Brazil), Sarajevo 2011, Calgary 2012, Prague 2013, Sofia 2014, Shanghai 2015, Yerevan 2016, Kazan 2017, Nottingham 2018. The total number of participants is expected to be about 300. In the past, participation was typically from over 30 countries.

General Information

Organizers



A.M. Prokhorov General Physics Institute, Moscow,
Russia



Astro Ltd., Hong Kong



Institute of Physics, London, UK



International Laser Center, Moscow, Russia



Pohang University of Science and Technology
(POSTECH), Pohang, South Korea

Sponsors



International Laser Center, Moscow, Russia



Astro Ltd., Hong Kong

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UK Headquarters, IOP Publishing Limited, Bristol, UK

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Logitech International S.A., Lausanne, Switzerland



Quantum Technology Centre, Moscow, Russia



Optical Society of Korea, Seoul, South Korea



Gyeongju City, Gyeongju, South Korea



Hwabaek International Convention Center (HICO), Gyeongju, South Korea



Pohang University of Science and Technology (POSTECH), Pohang, South Korea

Chairpersons

Pavel P Pashinin	A M Prokhorov General Physics Institute, Moscow, Russia
Byoungcho Lee	Seoul National University, Seoul, Korea

Steering Committee

Vanderlei S. Bagnato	University of São Paulo, São Carlos, SP, Brazil
Jens Biegert	Institute of Photonic Sciences, Barcelona, Spain
Joseph H. Eberly	University of Rochester, Rochester, NY, USA
Mikhail V. Fedorov	A.M. Prokhorov General Physics Institute, Moscow, Russia
Sergey A. Gonchukov	National Research Nuclear University MEPhI, Moscow, Russia
Miroslav Jelínek	Institute of Physics, Prague, Czech Republic
Sergei P. Kulik	Lomonosov Moscow State University, Moscow, Russia
Vladimir A. Makarov	International Laser Center, Moscow, Russia
Dejan Milošević	University of Sarajevo, Sarajevo, Bosnia and Herzegovina
Gérard Mourou	École Polytechnique, Palaiseau, France
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Vyacheslav I. Yukalov	Joint Institute for Nuclear Research, Dubna, Moscow Region, Russia
Aleksey M. Zheltikov	Lomonosov Moscow State University, Moscow, Russia

Advisory & Program Committee

Pierre Agostini	Ohio State University, Columbus, OH, USA
Sergey N. Bagayev	Institute of Laser Physics, Novosibirsk, Russia
Wilhelm Becker	Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany
Ekaterina Borisova	Institute of Electronics, Sofia, Bulgaria
Dagmar Bruß	Universität Düsseldorf, Düsseldorf, Germany
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Goran Pichler	Institute of Physics, Zagreb, Croatia
Lev P. Pitaevskii	University of Trento, Trento, Italy
Nataliya N. Rubtsova	Rzhanov Institute of Semiconductor Physics, Novosibirsk, Russia
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Alexander Shkurinov	Lomonosov Moscow State University, Moscow, Russia
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Orazio Svelto	Politecnico di Milano, Milan, Italy
Ken-ichi Ueda	Institute for Laser Science, Tokyo, Japan
Evgeny A. Vinogradov	Institute of Spectroscopy, Troitsk, Russia
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Ian A. Walmsley	Oxford University, Oxford, UK
Ernst Wintner	Photonics Institute, Vienna, Austria
Eugene Zaremba	Queen's University, Kingston, ON, Canada
Nikolay V. Znamensky	Russian Research Center "Kurchatov Institute", Moscow, Russia

Local Organizing Committee

Yoon-Ho Kim	Pohang University of Science and Technology, Pohang, Korea
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Meeting Timetable and Location of the Events

Location of the Events

Hwabaek International Convention Center (HICO)

No.	Name
H1	201
H2	202
H3	203
H4	204
H5	205
H6	206
H7	101-104

Seminars Legend

Code	Title
OR	Opening Remarks
Pl	Plenary Session
S1	Seminar 1: Modern Trends in Laser Physics
S2	Seminar 2: Strong Field & Attosecond Physics
S3	Seminar 3: Laser Biomedical Applications
S4	Seminar 4: Physics of Lasers
S5	Seminar 5: Nonlinear Optics & Spectroscopy
S6	Seminar 6: Physics of Cold Trapped Atoms
S7	Seminar 7: Quantum Information Science
S8	Seminar 8: Fiber Optics
S9	Seminar 9: Extreme Light Technologies, Science, and Applications

Schedule**Monday, 8 July, 2019**

	S1	S2	S5	S6	S7	S8	S9
09:30-10:00	Opening Remarks: Hall 7						
10:00-10:45	Plenary Session: Hall 7						
10:45-11:15	Coffee Break						
11:15-12:30	H1	H2	H5	H6	H3		H4
12:30-14:00	Lunch Break						
14:00-16:00	H1	H2	H5	H6	H3		H4
16:00-16:30	Coffee Break						
16:30-18:30	H1	H2	H5	H6	H3		H4
19:00-22:00	Welcome Party						

Tuesday, 9 July, 2019

	S1	S2	S5	S6	S7	S8	S9
09:15-10:00	Plenary Session: Hall 7						
10:00-10:45	Plenary Session: Hall 7						
10:45-11:15	Coffee Break						
11:15-12:30	H1	H2	H5	H6	H3		H4
12:30-14:00	Lunch Break						
14:00-16:30	H1	H2	H5	H6	H3		H4
17:30-20:00	Poster Session						

Wednesday, 10 July, 2019

	S1	S2	S5	S6	S7	S8	S9
10:00-10:45	Plenary Session: Hall 7						
10:45-11:15	Coffee Break						
11:15-12:30	H1	H2		H6	H3	H5	H4
12:30-14:00	Lunch Break						
14:00-16:00	H1	H2		H6	H3	H5	H4
16:00-16:30	Coffee Break						
16:30-18:30	H1	H2		H6	H3	H5	H4
19:30-22:00	Official Dinner						

Thursday, 11 July, 2019

	S1	S2	S5	S6	S7	S8	S9
09:15-10:45	H1	H2		H6	H3		H4
10:45-11:15	Coffee Break						
11:15-12:30	H1	H2		H6	H3		H4
12:30-14:00	Lunch Break						
14:00-16:00	H1	H2		H6	H3		
16:00-16:30	Coffee Break						
16:30-18:30		H2					

Opening Remarks

Monday, 8 July, 2019

OR.1 (09:30 – 10:00)

Chair: Vyacheslav Yukalov (Russia)

OR.1.1 V I Yukalov (Dubna, Russia)

09:30 – 09:40 *Opening Remarks*

OR.1.2 B H Lee (Seoul, South Korea)

09:40 – 09:55 *Welcome Speech*

Plenary Session

Monday, 8 July, 2019

PL.1 (10:00 – 10:45)

Chair: Vyacheslav Yukalov (Russia)

PL.1.1 Y Castin (Paris, France)
10:00 – 10:30 *Challenges in the Damping of Sound in Superfluids*

Tuesday, 9 July, 2019

PL.2 (09:15 – 10:00)

Chair: Olga Kosareva (Russia)

PL.2.1 D Strickland (Waterloo, ON, Canada)
09:15 – 09:45 *Generating High-Intensity Ultrashort Optical Pulses*

PL.3 (10:00 – 10:45)

Chair: Mikhail Fedorov (Russia)

PL.3.1 K Ueda (Sendai, Japan)
10:00 – 10:30 *Science at XFELs: Present Status and Future Directions*

Wednesday, 10 July, 2019

PL.4 (10:00 – 10:45)

Chair: Sergei Kulik (Russia)

PL.4.1 I I Ryabtsev (Novosibirsk, Russia)
10:00 – 10:30 *Many-Body Interactions of Cold Rydberg Atoms and Quantum Information*

Seminar 1: Modern Trends in Laser Physics

Co-Chairs

Olga Kocharovskaya

Texas A&M University, College Station, TX, USA

Kirill A. Prokhorov

A.M. Prokhorov General Physics Institute,
Moscow, Russia

Monday, 8 July, 2019

S1.1 (11:15 – 12:30)

Chair: Barry Garraway (UK)

S1.1.1 V M Akulin (Orsay, France; Moscow, Russia), A Mandilara, C Valagiannopoulos (Astana, Kazakstan)
11:15 – 11:45 *Classical and Quantum Dispersion-Free Coherent Propagation by Tailoring Multimodal Coupling* (invited talk)

S1.1.2 Y Chen (Hefei, China)
11:45 – 12:15 *Global Quantum Communication Network and Future Aspects* (invited talk)

S1.2 (14:00 – 16:00)

Chair: Vladimir Akulin (France)

S1.2.1 B M Garraway (Brighton, UK)
14:00 – 14:30 *Radio-Frequency Dressed Atoms for Space and Quantum Technology* (invited talk)

S1.2.2 S G Lukishova (Rochester NY, USA)
14:30 – 15:00 *Room-Temperature Single-Photon Sources: State of the Art* (invited talk)

S1.2.3 L Yuan (Shanghai, China)
15:00 – 15:25 *Studies of Topological Photonics in a Synthetic Space Including the Frequency Axis of Light* (invited talk)

S1.2.4 V A Khlebnikov, V V Tsyganok, D A Pershin, E T Davletov, D Shaykin (Moscow, Russia), A V Akimov (Moscow, Russia; College Station, TX, USA)
15:25 – 15:50 *Deep Laser Cooling of Thulium Atom* (invited talk)

S1.3 (16:30 – 18:30)**Chair:** Svetlana Lukishova (USA)

- S1.3.1** S-W Li (Beijing, China)
16:30 – 16:55 *The Production of Correlation Entropy in Thermodynamics* (invited talk)
- S1.3.2** N N Rubtsova, S A Kochubei, E B Khvorostov (Novosibirsk, Russia),
16:55 – 17:20 V A Reshetov (Togliatti, Russia)
Kinetics of Collision-Induced Photon Echo (invited talk)
- S1.3.3** H Lignier, T Courageux (Orsay, France), Aournol (Villetaneuse, France), P Pillet, D Comparat (Orsay, France)
17:20 – 17:45 *A Broadband Laser for Manipulation and Spectroscopy of BaF* (invited talk)

Tuesday, 9 July, 2019**S1.4 (11:15 – 12:30)****Chair:** Christian Ott (Germany)

- S1.4.1** D B Milošević (Berlin, Germany; Sarajevo, Bosnia and Herzegovina), W Becker (Berlin, Germany; Moscow, Russia)
11:15 – 11:45 *Generation of Elliptically Polarized Soft X-Rays Using High-Order Harmonic Generation with Orthogonal Two-Color Laser Fields* (invited talk)
- S1.4.2** J H Mun, C H Nam (Gwangju, South Korea)
11:45 – 12:15 *Coherent Control of Rotational and Electronic Dynamics of Molecules* (invited talk)

S1.5 (14:00 – 16:30)**Chair:** James Koga (Japan)

- S1.5.1** C M Kim (Gwangju, South Korea), S P Kim (Gwangju, South Korea; Kunsan, South Korea)
14:00 – 14:30 *Perspective of Laboratory Astrophysics Using Ultra-Intense Lasers* (invited talk)
- S1.5.2** C Ott (Heidelberg, Germany)
14:30 – 14:55 *Nonlinear XUV Absorption Spectroscopy with a Free-Electron Laser* (invited talk)

- S1.5.3** 14:55 – 15:20 H Stiel, A Jonas (Berlin, Germany), R Jung (Berlin, Germany; München, Germany), I Mantouvalou, M Schnuerer, J Tuemmler (Berlin, Germany)
X-Ray Absorption Spectroscopy in the Lab Using Highly Brilliant Soft X-Ray Sources Based on Thin Disk Pump Lasers (invited talk)
- S1.5.4** 15:20 – 15:45 H-S Kang (Pohang, South Korea)
Performance Achieved at PAL-XFEL and Its Future Plan (invited talk)

Wednesday, 10 July, 2019

S1.6 (11:15 – 12:30)

Chair: Holger Stiel (Germany)

- S1.6.1** 11:15 – 11:45 D D Mai, O Hort, E Klimešová, B Angelov, S Espinoza (Prague, Czech Republic), M Krikunova (Berlin, Germany; Prague, Czech Republic), J Nejdí (Prague, Czech Republic), J Andreasson (Gothenburg, Sweden; Prague, Czech Republic)
Laser-Driven Secondary X-Ray Sources and Applications at ELI Beamlines (invited talk)
- S1.6.2** 11:45 – 12:15 V A Antonov, I R Khairulin (Nizhny Novgorod, Russia), K C Han, T R Akhmedzhanov, T R Akhmedzanov, M O Scully, O Kocharovskaya (College Station, TX, USA)
X-Ray Plasma Based Lasers Driven by an IR Field (invited talk)

S1.7 (14:00 – 16:00)

Chair: Heung-Sik Kang (South Korea)

- S1.7.1** 14:00 – 14:30 D Zhang (Hangzhou, China)
Bond-Selective Imaging Based on Molecular Vibrational Fingerprint (invited talk)
- S1.7.2** 14:30 – 15:00 K P Heeg, A Kaldun (Heidelberg, Germany), C Strohm (Hamburg, Germany), C Ott, R Subramanian, D Lentrodt (Heidelberg, Germany), J Haber, H-C Wille (Hamburg, Germany), S Goerttler (Heidelberg, Germany), R Rüffer (Grenoble, France), C H Keitel (Heidelberg, Germany), R Röhlberger (Hamburg, Germany), T Pfeifer, J Evers (Heidelberg, Germany)
Coherent X-Ray-Optical Control of Nuclear Dynamics with Zeptosecond Phase-Stability (invited talk)
- S1.7.3** 15:00 – 15:25 P-H Lin, Y-Y Fu, W-T Liao (Taoyuan, Taiwan)
Magnetic Control of X-Ray Spectra in Nuclear Forward Scattering (invited talk)

- S1.7.4** J K Koga, A S Pirozhkov, T Zh Esirkepov, B González-Izquierdo, A Sagisaka (Kizugawa, Kyoto, Japan), T A Pikuz (Osaka, Japan; Moscow, Russia), Z E Davidson (Glasgow, UK), K Ogura (Kizugawa, Kyoto, Japan), A Bierwage (Naka, Japan), K Huang, N Nakanii (Kizugawa, Kyoto, Japan), A Ya Lopatin (Nizhny Novgorod, Russia), Y Fukuda (Kizugawa, Kyoto, Japan), D Neely (Glasgow, UK; Didcot, UK), P McKenna (Glasgow, UK), E N Ragozin (Dolgoprudny, Russia; Moscow, Russia), S A Pikuz (Moscow, Russia), N I Chkhala, N N Salashchenko (Nizhny Novgorod, Russia), S Namba (Hiroshima, Japan), H Kiriya, M Koike, K Kondo, T Kawachi, M Kando (Kizugawa, Kyoto, Japan)
Burst Intensification by Singularity Emitting Radiation (BISER)
(invited talk)

S1.8 (16:30 – 18:30)

Chair: Alexey Akimov (USA)

- S1.8.1** P Hemmer (College Station, TX, USA)
16:30 – 17:00 *Nanodiamonds for Quantum Enhanced Bio-Sensing* (invited talk)
- S1.8.2** N Mauranyapin, L Madsen, W Bowen (Brisbane, Australia)
17:00 – 17:25 *Biosensing at the Quantum Noise Limit* (invited talk)
- S1.8.3** Z Zhang (Waco TX, USA)
17:25 – 17:55 *Nano Light Focusing with Fiber-Plasmonic Hybrid Probe* (invited talk)
- S1.8.4** Y Ishimatsu, I Faniayeu, T Nakajima (Uji, Japan)
17:55 – 18:20 *Two Simple Ways to Tune the Surface Plasmon Resonance of Ag Films Without and with Thin Polymer Films* (invited talk)

Thursday, 11 July, 2019

S1.9 (09:15 – 10:45)

Chair: Aleksei Taichenachev (Russia)

- S1.9.1** C Ohae, J Zheng, W Liu, M Katsuragawa (Tokyo, Japan)
09:15 – 09:45 *Tailored Linear and Nonlinear Optical Processes by Implementing Arbitrary Manipulations of Optical Phase* (invited talk)
- S1.9.2** D Drahí (Oxford, UK), D V Sychev, A E Ulanov, E S Tiunov, A A Pushkina, A Kuzhamuratov, V Novikov, K Pirov (Moscow, Russia), I A Walmsley (Oxford, UK), A I Lvovsky (Oxford, UK; Moscow, Russia)
09:45 – 10:15 *The Three Qubits in Quantum Optics* (invited talk)

S1.10 (11:15 – 12:30)**Chair:** Peter Drummond (Australia)

S1.10.1 11:15 – 11:45 A V Taichenachev, A N Goncharov, A E Bonert, V I Baraulya, M A Tropnikov, S A Kuznetsov, O N Prudnikov, S N Bagayev (Novosibirsk, Russia)

Atom Interferometry with Ultracold Mg Atoms: Frequency Standard and Quantum Sensors (invited talk)

S1.10.2 11:45 – 12:25 V S Malinovsky, M H Goerz (Adelphi MD, USA), M A Kasevich (Stanford CA, USA)

Quantum Optimal Control of Motion in an Atomic Fountain Interferometer (invited talk)

S1.11 (14:00 – 16:00)**Chair:** Vladimir Malinovsky (USA)

S1.11.1 14:00 – 14:30 P D Drummond (Melbourne, Australia)

Time Symmetry Breaking in Laser Physics (invited talk)

S1.11.2 14:30 – 15:00 S M Shahriar, J Li (Evanston IL, USA)

Test of Gravitationally Induced Collapse of Quantum Superposition with an Atomic Interferometer Without Forming a Schrödinger Cat State (invited talk)

S1.11.3 15:00 – 15:25 M D Reid, R Y Teh (Melbourne, Australia), F-X Sun (Beijing, China; Melbourne, Australia), L Rosales-Zarate (León, Mexico), A Sidorov, P D Drummond, B J Dalton (Melbourne, Australia)

Macroscopic Quantum States in a BEC, Cat-States Using Squeezed Reservoirs, and the Macroscopic Pointer (invited talk)

S1.11.4 15:25 – 15:50 S Santra, V Malinovsky (Adelphi MD, USA)

Quantum-Enhanced Interferometry Using a Quantum Network (invited talk)

Seminar 2: Strong Field & Attosecond Physics

Co-Chairs

Wilhelm Becker	Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany
Jens Biegert	Institute of Photonic Sciences, Barcelona, Spain
Mikhail V. Fedorov	A.M. Prokhorov General Physics Institute, Moscow, Russia
Dong Eon Kim	Pohang University of Science and Technology, Pohang, Korea

Monday, 8 July, 2019

S2.1 (11:15 – 12:30)

Chair: Luis Plaja (Spain)

S2.1.1	<u>X-B Bian</u> (Wuhan, China)
11:15 – 11:45	<i>Interference Effects in High-order Harmonic Generation from Solids</i> (invited talk)
S2.1.2	<u>V V Strelkov</u> (Moscow, Russia)
11:45 – 12:10	<i>Modification of High Harmonic Intensity and Phase Due to Resonance with Continuous Quasi-Stable State</i> (invited talk)
S2.1.3	C Leithold, J Reislöhner, <u>A N Pfeiffer</u> (Jena, Germany)
12:10 – 12:30	<i>Harmonic Concatenation of 1.5-femtosecond-Pulses in the Deep UV</i> (invited talk)

S2.2 (14:00 – 16:00)

Chair: Xuebin Bian (China)

S2.2.1	O Zurrón-Cifuentes, R Boyero-García, C Hernández-García (Salamanca, Spain), A Picón (Madrid, Spain), <u>L Plaja</u> (Salamanca, Spain)
14:00 – 14:20	<i>High-Harmonic Generation in Graphene: Physical Mechanisms and Anisotropic Response</i> (invited talk)
S2.2.2	A A Romanov, <u>A A Silaev</u> (Nizhny Novgorod, Russia), M V Frolov (Voronezh, Russia), N V Vvedesnkii (Nizhny Novgorod, Russia)
14:20 – 14:40	<i>The Influence of Polarization of Noble-Gas Atoms in Strong Laser Field on High-Order Harmonic Generation</i>

- S2.2.3** V A Birulia, V V Strelkov (Moscow, Russia)
14:40 – 15:00 *Two-Color High Harmonic Generation: Spectral Caustic, Role of Coulomb Effects, Quasi-Monochromatic XUV Source*
- S2.2.4** K-Y Chang, P-C Huang, P-Y Huang, M-S Tsai, M-C Chen (Hsinchu, Taiwan)
15:00 – 15:25 *Polarization Control of High-Order Harmonic Generation: The Role of Atomic Phase* (invited talk)
- S2.2.5** V S Melezhik, S Shadmehri (Dubna, Russia)
15:25 – 15:45 *Modeling of Atomic Electrons Dynamics and High-Harmonics Generation in Strong Laser Fields with 2D DVR*

S2.3 (16:30 – 18:30)

Chair: Ming-Chang Chen (Taiwan)

- S2.3.1** A Fleischer (Haifa, Israel; Tel-Aviv, Israel)
16:30 – 16:50 *Towards Recollision-Less High Harmonic Generation* (invited talk)
- S2.3.2** V H Hoang, A T Le (Rolla, MO 65409, USA)
16:50 – 17:20 *A Quantitative Rescattering Model for High-Harmonic Generation in Doped Materials*
- S2.3.3** B Fetić (Sarajevo, Bosnia and Herzegovina), D B Milošević (Berlin, Germany; Sarajevo, Bosnia and Herzegovina)
17:20 – 17:40 *High-Order Above-Threshold Ionization of the H_2^+ Ion for Large Internuclear Distances* (invited talk)
- S2.3.4** A Marini, A Ciattoni (L'Aquila, Italy), C Conti (Rome, Italy)
17:40 – 17:55 *Ultrafast Nonlinear Dynamics of Plasmonic Materials* (invited talk)
- S2.3.5** R Moszynski (Warsaw, Poland)
17:55 – 18:25 *Theoretical Description of the Ionization Processes With a Discrete Representation of the Electronic Continuum*

Tuesday, 9 July, 2019

S2.4 (11:15 – 12:30)

Chair: Dong Eon Kim (South Korea)

- S2.4.1** Y W Park, C H Shim, D E Kim (Pohang, South Korea)
11:15 – 11:35 *History of the Proposal for the Generation of Isolated Terawatt Attosecond X-Ray Pulse*
- S2.4.2** G Geloni, S Serkez, S Tomin (Schenefeld, Germany)
11:35 – 12:00 *Possible Concepts for Attosecond Pulse Generation at the European XFEL* (invited talk)

- S2.4.3** A Malyzhenkov, Y Arbelo, P Dijkstal, S Bettoni, P Craievich, E Ferrari, S Reiche, P Juranic, E Prat (Villigen, Switzerland)
 12:00 – 12:30 *Generation of Ultra-Short Hard X-Ray Pulses at SwissFEL* (invited talk)

S2.5 (14:00 – 16:30)

Chair: Gianluca Geloni (Germany)

- S2.5.1** S Kuschel (Stanford CA, USA), A A Haddad (Lemont, IL, USA),
 14:00 – 14:25 F Zimmermann (Stanford CA, USA), L Flueckiger (La Trobe, Australia), M R Ware, J Duris, J P MarArthur, A Lutmann, P Walter, M F Lin, X Li, J W Aldrich (Stanford CA, USA), C Bostedt (Lausanne, Switzerland; Villigen, Switzerland)
Single-Shot Coherent Diffraction Imaging of Xe Clusters with Attosecond Pulse Duration Near the Absorption Edge
- S2.5.2** S-K Son (Hamburg, Germany)
 14:25 – 14:50 *Ultrafast Dynamics of Atoms and Molecules Induced by Intense X-Ray Free-Electron Laser Pulses*
- S2.5.3** I H Nam, C H Shim, H S Kang (Pohang, South Korea)
 14:50 – 15:10 *X-Ray Free Electron Laser Pulse Trains Using Multiple-Slotted Foil for Attosecond Pulse Generation* (invited talk)
- S2.5.4** M Meyer, T M Baumann, R Boll, A De Fanis, P Grychtol (Schenefeld, Germany), M Ilchen (Kassel, Germany; Schenefeld, Germany), T Mazza (Schenefeld, Germany), V Music (Kassel, Germany; Schenefeld, Germany), Y Ovcharenko, D Rivas, G Geloni, S Serkez, S Tomin, G Feng (Schenefeld, Germany), E V Gryzlova, A N Grum-Grzhimailo (Moscow, Russia)
 15:10 – 15:35 *Dynamics in Multi-Photon Ionization Induced by Intense XUV FEL Pulses*
- S2.5.5** J Cryan (Menlo Park CA, USA; Stanford CA, USA)
 15:35 – 16:00 *Attosecond X-ray Experiments at Free Electron Laser Facilities* (invited talk)

Wednesday, 10 July, 2019

S2.6 (11:15 – 12:30)

Chair: Carlos Hernandez-Garcia (Spain)

- S2.6.1** K Yamanouchi (Tokyo, Japan)
 11:15 – 11:45 *Strong Field High-Resolution Fourier Transform Spectroscopy* (invited talk)

S2.6.2 11:45 – 12:15 Z Tao (Shanghai, China), C Chen (Boulder CO, USA), T Szilvási (Madison WI, USA), M Keller, W You (Boulder CO, USA), U Thumm (Manhattan KS, USA), M Mavrikakis (Madison WI, USA), M Aeschlimann (Kaiserslautern, Germany), P Openeer (Uppsala, Sweden), H Kapteyn, M Murnane (Boulder CO, USA)
Strong Influence of Band Structure on Attosecond Electron Dynamics in Solids (invited talk)

S2.6.3 12:15 – 12:30 A S Korney, B A Zon (Voronezh, Russia)
Sequential Triple Tunnel Detachment of Anion F^-

S2.7 (14:00 – 16:00)

Chair: Avner Fleischer (Israel)

S2.7.1 14:00 – 14:20 E Lötstedt, Y Zhang, T Ando, A Iwasaki (Tokyo, Japan), H Xu (Changchun, China; Shanghai, China), K Yamanouchi (Tokyo, Japan)
Theoretical Simulation of Population Inversion in N_2^+ Created in an Intense Laser Field (invited talk)

S2.7.2 14:20 – 14:50 O I Tolstikhin (Moscow, Russia), T Morishita (Tokyo, Japan)
Strong-Field Ionization, Rescattering and Target Structure Imaging with Vortex Electrons

S2.7.3 14:50 – 15:20 Y Prior (Rehovot, Israel; Shanghai, China), J Qiang (Shanghai, China), I Tutunnikov (Rehovot, Israel), P Lu, K Lin, W Zhang, F Sun (Shanghai, China), I Sh Averbukh (Rehovot, Israel), J Wu (Shanghai, China)
Echo in a Single Isolated Molecule (invited talk)

S2.7.4 15:20 – 15:45 U Saalmann (Dresden, Germany)
Controlled Adiabatic Passage to the Continuum (invited talk)

S2.8 (16:30 – 18:30)

Chair: Toru Morishita (Japan)

S2.8.1 16:30 – 16:55 J Wu (Shanghai, China)
Strong-Field Dynamics of Molecules: Electron-Nuclear Correlation

S2.8.2 16:55 – 17:25 L Rego (Salamanca, Spain), K M Dorney, N J Brooks, Q Nguyen, C T Liao (Boulder CO, USA), J San Román (Salamanca, Spain), D Couch, A Liu (Boulder CO, USA), E Pisanty, M Lewenstein (Barcelona, Spain), L Plaja (Salamanca, Spain), H Kapteyn, M Murnane (Boulder CO, USA), C Hernández-García (Salamanca, Spain)
Structured Ultrafast Pulses with Time-Dependent Orbital Angular Momentum (invited talk)

- S2.8.3** H Yun, J Mun, W Cho, S I Hwang, S B Park, I A Ivanov, C H Nam,
17:25 – 17:50 K T Kim (Gwangju, South Korea)
Coherent EUV Radiation Generated Through Strong Field Excitation
- S2.8.4** K Liu, I Barth (Halle, Germany)
17:50 – 18:10 *Numerical Solution of Time-Dependent Dirac Equation for Tunnel Ionization of Hydrogen by Strong Circularly Polarized Infrared Laser Fields*
- S2.8.5** V Stooß, S M Cavaletto (Heidelberg, Germany), S Donsa (Vienna, Austria), A Blättermann, P Birk, M Hartmann, G D Borisova, T Ding, C H Keitel (Heidelberg, Germany), I Brezinova, J Burgdörfer (Vienna, Austria), C Ott, T Pfeifer (Heidelberg, Germany)
18:10 – 18:30 *From Absorption Spectra to the Strong Field Driven Dipole Response*

Thursday, 11 July, 2019

S2.9 (09:15 – 10:45)

Chair: Marcelo Ciappina (Czech Republic)

- S2.9.1** I Barth, K Liu (Halle, Germany)
09:15 – 09:40 *Deformation of Atomic $\mathbf{p}_{\pm}$ Orbitals in Strong Elliptically Polarized Laser Fields* (invited talk)
- S2.9.2** N Eicke, S Brennecke, M Lein (Hannover, Germany)
09:40 – 10:00 *Atomic and Orientation-Dependent Molecular Ionization Times from an Attoclock with Bicircular Fields*
- S2.9.3** A P Fidler (Berkeley CA, USA), S J Camp (Baton Rouge LA, USA), E R Warrick, E Bloch, H J B Marroux, D M Neumark (Berkeley CA, USA), K J Schafer, M B Gaarde (Baton Rouge LA, USA), S R Leone (Berkeley CA, USA)
10:00 – 10:25 *Nonlinear Signal Generation in the Extreme Ultraviolet with Attosecond Pulses*
- S2.9.4** X Y Lai, Y Y Huang, X J Liu (Wuhan, China)
10:25 – 10:40 *Bohmian Trajectory Perspective on the Atomic Ionization in Strong Laser Fields* (invited talk)

S2.10 (11:15 – 12:30)

Chair: Erik Lötstedt (Japan)

- S2.10.1** A S Kheifets, A W Bray (Canberra, Australia), V V Serov (Saratov, Russia)
11:15 – 11:45 *Attoclock on Atomic and Molecular Hydrogen* (invited talk)

S2.10.2 M Hartmann, V Stooß, P Birk, G D Borisova, C Ott, T Pfeifer
11:45 – 12:00 (Heidelberg, Germany)

Attosecond Time Delays in Resonant Photoexcitation (invited talk)

S2.10.3 S Zhong (Lund, Sweden), J Vinbladh (Stockholm, Sweden), D Busto (Lund, Sweden), R Squibb (Göteborg, Sweden), M Isinger, L Neoričić, H Laurell, C Arnold (Lund, Sweden), E Lindroth (Stockholm, Sweden), R Feifel (Göteborg, Sweden), M Gisselbrecht, A L'Huillier (Lund, Sweden)

Attosecond Time Delay in Xenon 4d Photoionization Probed by Coincidence Spectroscopy (invited talk)

S2.11 (14:00 – 16:00)

Chair: Ulf Saalmann (Germany)

S2.11.1 A Desrier, A Maquet, R Taïeb, J Caillat (Paris, France)
14:00 – 14:20 *Ionization Dynamics Through Fano Resonances: Time-Domain Interpretations of Spectral Amplitudes*

S2.11.2 X-R Xiao, M-X Wang, H Liang, Q Gong, L-Y Peng (Beijing, China)
14:20 – 14:45 *Measuring the Electron Displacement Induced by a Short Laser Pulse* (invited talk)

S2.11.3 D Efimov, J Prauzner-Bechcicki (Kraków, Poland), J Thiede, B Eckhardt (Marburg, Germany), J Zakrzewski (Kraków, Poland)
14:45 – 15:10 *Study of Electronic Correlations by Examining Double Ionization of 3-Electron Atoms* (invited talk)

S2.11.4 R Kanya, K Yamanouchi (Tokyo, Japan)
15:10 – 15:35 *Determination of Collision Times in Laser-Assisted Electron Scattering for Ultrafast Imaging of Atoms and Molecules* (invited talk)

S2.11.5 M Osslander, F Siegrist, J Riemensberger, R Kienberger, M Schultze (München, Germany)
15:35 – 15:55 *Absolute Timing of Photoemission* (invited talk)

S2.12 (16:30 – 18:30)

Chair: Jeremie Caillat (France)

S2.12.1 M F Ciappina (Prague, Czech Republic), S V Popruzhenko (Dresden, Germany; Moscow, Russia), S V Bulanov (Prague, Czech Republic), T Ditmire (Austin TX, USA), G Korn, S Weber (Prague, Czech Republic)
16:30 – 17:00 *Toward Atomic Diagnostics of Ultrahigh Laser Intensities* (invited talk)

- S2.12.2** S Patchkovskii (Berlin, Germany), A Bray (Canberra, Australia)
17:00 – 17:20 *Final-State-Resolved Acceleration of Neutral Atoms by Non-Uniform Laser Fields* (invited talk)
- S2.12.3** K Krajewska, F Cajiao Vélez, J Z Kamiński (Warsaw, Poland)
17:20 – 17:40 *Generation of Twisted Electrons Using Intense Laser Fields* (invited talk)
- S2.12.4** S Brennecke, N Eicke, M Lein (Hannover, Germany)
17:40 – 18:00 *Gouy's Phase Anomaly in Electron Waves Produced by Strong-Field Ionization and Its Signatures in Photoelectron Momentum Distributions*
- S2.12.5** M Qasim, V S Yakovlev (Garching, Germany)
18:00 – 18:20 *Ultrafast Strong-Field Excitation of Solids* (invited talk)

Seminar 3: Laser Biomedical Applications

Co-Chairs

Thomas Bocklitz

Institute of Physical Chemistry and Abbe Center
of Photonics, Jena, Germany

Ekaterina Borisova

Institute of Electronics, Sofia, Bulgaria

Victor Loschenov

A.M. Prokhorov General Physics Institute,
Moscow, Russia

Seminar 4: Physics of Lasers

Co-Chairs

Mikhail Kalashnikov

Max-Born-Institut, Berlin, Germany

Andrei B. Savel'ev

Lomonosov Moscow State University, Moscow,
Russia

Ivan A. Shcherbakov

A.M. Prokhorov General Physics Institute,
Moscow, Russia

Seminar 5: Nonlinear Optics & Spectroscopy

Co-Chairs

Yuri Kivshar	Australian National University, Canberra, Australia
Olga G. Kosareva	Lomonosov Moscow State University, Moscow, Russia
Vladimir A. Makarov	International Laser Center, Moscow, Russia

Monday, 8 July, 2019

S5.1 (11:15 – 12:30)

Chair: Olga Kosareva (Russia)

- S5.1.1** 11:15 – 11:40 A Mysyrowicz, R Danylo, A Houard (Palaiseau, France), V Tikhonchuk (Bordeaux, France), P Ding (Lund, Sweden), Y Liu (Shanghai, China)
Quantum Interference Between Transition Probability Amplitudes in N_2^+ (invited talk)
- S5.1.2** 11:40 – 12:05 P Polynkin (Tucson AZ, USA)
Air Filamentation with SWIR and MIR Ultrashort-Pulse Lasers (invited talk)
- S5.1.3** 12:05 – 12:30 Y Liu (Shanghai, China), R Danylo (Shanghai, China; Palaiseau, France), X Zhang, Z Fan, D Zhou, Q Liang, S Zhuang (Shanghai, China), A Houard, A Mysyrowicz (Palaiseau, France), E Oliva (Madrid, Spain)
Formation Dynamics of Excited Neutral Nitrogen Molecules inside Femtosecond Filaments (invited talk)

S5.2 (14:00 – 16:00)

Chair: André Mysyrowicz (France)

- S5.2.1** 14:00 – 14:20 J Yao (Shanghai, China), J Chen (Shanghai, China; Beijing, China), H Zhang (Dijon, France), Z Liu, B Xu (Shanghai, China; Beijing, China), W Chu, L Qiao, Z Wang (Shanghai, China), J Fatome, O Faucher (Dijon, France), C Wu (Beijing, China; Shanxi, China), Y Cheng (Shanghai, China; Shanxi, China)
Giant Enhancement of Molecular Nitrogen Ion Lasing Induced by Electronic Coherence

S5.2.2 T-J Wang (Shanghai, China), O Kosareva (Moscow, Russia), R Li, Z Xu (Shanghai, China)
 14:20 – 14:45 *Polarization and Chirp Effects on the Laser Intensity Inside an Air Filament* (invited talk)

S5.2.3 H L Xu (Changchun, China; Shanghai, China)
 14:45 – 15:10 *Femtosecond Laser Filamentation for Remote Sensing of Water Contamination and Biological Materials*

S5.2.4 J Ju (Shanghai, China), L Ran, Z Deng (Beijing, China), H Sun, J Liu (Shanghai, China), S L Chin (Québec City, Canada), R Li, Z Xu (Shanghai, China)
 15:10 – 15:35 *Laser-Induced Aerosols and Their Cloud Condensation Nuclei Activity* (invited talk)

S5.3 (16:30 – 18:30)

Chair: Pavel Polynkin (USA)

S5.3.1 Q Su, N Zhang, W Liu (Tianjin, China)
 16:30 – 16:55 *THz Birefringence Inside Femtosecond Laser Filament in Air* (invited talk)

S5.3.2 Y Chen (Shanghai, China)
 16:55 – 17:20 *Controllable Strong Terahertz Radiation from Femtosecond Laser Produced Air Filaments* (invited talk)

S5.3.3 A A Silaev, A A Romanov, N V Vvedenskii (Nizhny Novgorod, Russia)
 17:20 – 17:35 *Detection of Ultrabroadband Terahertz and Mid-IR Radiation During Gas Ionization by Optical Femtosecond Pulses*

S5.3.4 V Yu Fedorov (Doha, Qatar; Moscow, Russia), S Tzortzakis (Doha, Qatar; Heraklion, Greece)
 17:35 – 18:00 *Nonlinear Transformations of Ring-Airy Beams* (invited talk)

S5.3.5 O G Kosareva (Moscow, Russia; Troitsk, Russia; Tianjin, China), N A Panov, D E Shipilo (Moscow, Russia; Troitsk, Russia), I A Nikolaeva (Moscow, Russia), P G Polynkin (Tucson AZ, USA), V O Kompanets, S V Chekalin (Troitsk, Russia)
 18:00 – 18:10 *Filamentation Governed by Selective Absorption in Pressurized Molecular Gases* (invited talk)

S5.3.6 D E Shipilo, I A Nikolaeva, N A Panov (Moscow, Russia), Y Chen (Shanghai, China), W Liu (Tianjin, China), L V Seleznev (Moscow, Russia), O G Kosareva (Moscow, Russia; Tianjin, China)
 18:10 – 18:20 *Suitable Input Conditions for Quantifying the Yields of Secondary Emission from Femtosecond Filament*

- S5.3.7** A V Shutov, V D Zvorykin, N N Ustinovskii, I V Smetanin (Moscow, Russia)
 18:20 – 18:30 *The Influence of Air Humidity on the Electron Loss in Air*

Tuesday, 9 July, 2019

S5.4 (11:15 – 12:30)

Chair: Weiwei Liu (China)

- S5.4.1** T Ozaki (Varennes, Canada)
 11:15 – 11:40 *Subcycle THz Nonlinear Optics* (invited talk)
- S5.4.2** B Shim (Binghamton, NY, USA)
 11:40 – 12:05 *Wavelength-Scaled Studies of Laser Filamentation in Solids* (invited talk)
- S5.4.3** A Crego, E Conejero Jarque, J San Roman (Salamanca, Spain)
 12:05 – 12:20 *Understanding the High-Energy Limit of the Post-Compression Techniques: Self-Focusing Dynamics in Hollow-Core Fibers*
- S5.4.4** X Liu (Hangzhou, China)
 12:20 – 12:35 *Real-Time Observation of Soliton Buildup in Mode-Locked Lasers* (invited talk)

S5.5 (14:00 – 16:30)

Chair: Tsuneyuki Ozaki (Canada)

- S5.5.1** K Yamanouchi (Tokyo, Japan)
 14:00 – 14:25 *Population Inversion and Multiple-State Couplings in N_2^+ Lasing* (invited talk)
- S5.5.2** B H Lee, G-Y Lee, J W Sung (Seoul, South Korea)
 14:25 – 14:50 *Potential of Practical Metasurfaces*
- S5.5.3** H Li, Q Song, J Yao, Z Liu, J Chen, B Xu, K Lin, J Qiang, B He, H Xu, Y Cheng, H Zeng, J Wu (Shanghai, China)
 14:50 – 15:15 *N_2^+ Lasing by Bicircular Two-Color Fields* (invited talk)
- S5.5.4** C H Nee (Cyberjaya, Malaysia), S L Yap (Kuala Lumpur, Malaysia), T Y Tou, S S Yap (Cyberjaya, Malaysia)
 15:15 – 15:40 *Direct Synthesis of Nanodiamonds by Femtosecond Laser Irradiation of Ethanol* (invited talk)
- S5.5.5** A S Kornev, V E Chernov, B A Zon (Voronezh, Russia)
 15:40 – 15:55 *Frequency-Dependent Polarizabilities of Diatomic Molecules: Density Functional Theory and Ab Initio Methods Compared with Quantum-Defect Green Function Technique*

- S5.5.6** 15:55 – 16:10 C M Achim (Popa), A M Bratu, M E Bercu, M Mogildea, G Mogildea, D C Dumitras (Bucharest, Romania)
Photoacoustic Spectroscopy of CO₂ Laser in the Detection of Gaseous Molecules with Applications in Life Science
- S5.5.7** 16:10 – 16:25 N N Rubtsova, G M Borisov, D V Ledovskikh, A A Kovalyov, V V Preobrazhenski, M A Putyato, B R Semyagin (Novosibirsk, Russia)
Broadband Fast Semiconductor Mirrors for Passive Mode Locking of Near-IR Lasers (invited talk)
- S5.5.8** 16:25 – 16:40 V B Gildenburg, I A Pavlichenko (Nizhny Novgorod, Russia)
Nanogratings Induced by the Plasma Resonance Instability in the Volume of the Transparent Dielectric

Seminar 6: Physics of Cold Trapped Atoms

Co-Chairs

Vanderlei S. Bagnato	University of São Paulo, São Carlos, SP, Brazil
Boris Svistunov	University of Massachusetts, Amherst, MA, USA
Vyacheslav I. Yukalov	Joint Institute for Nuclear Research, Dubna, Moscow Region, Russia

Monday, 8 July, 2019

S6.1 (11:15 – 12:30)

Chair: Yvan Castin (France)

S6.1.1	<u>C A R Sa de Melo</u> (Atlanta GA, USA)
11:15 – 11:45	<i>Quantum Phases of Two-Component Interacting Bosons in Optical Lattices and in the Presence of Spin-Orbit and Rabi Couplings</i>
S6.1.2	<u>D Cohen</u> (Be'er Sheva, Israel)
11:45 – 12:15	<i>Chaos, Irreversibility and Hamiltonian Hysteresis in Bose-Hubbard Circuits</i>

S6.2 (14:00 – 16:00)

Chairs: Doron Cohen (Israel) and Carlos Sa De Melo (USA)

S6.2.1	<u>A Sinatra</u> (Paris, France), D Kajtoch, E Witkowska (Warsaw, Poland)
14:00 – 14:30	<i>Spin-Squeezing of Bosonic Atoms in an Optical Lattice</i>
S6.2.2	<u>V A Yurovsky</u> (Tel-Aviv, Israel)
14:30 – 15:00	<i>Diffraction Three-Body Collisions in Coupled Atom Waveguides</i>
S6.2.3	<u>N Dupuis</u> (Paris, France)
15:00 – 15:30	<i>Glassy Properties of the Bose-Glass Phase of a One-Dimensional Disordered Bose Fluid</i>
S6.2.4	<u>J Koch</u> , G Hunanyan (Bonn, Germany), S Felicetti (Paris, France), E Rico, E Solano (Bilbao, Spain), M Weitz (Bonn, Germany)
15:30 – 16:00	<i>Deep Strong Coupling Regime of the Quantum Rabi Model Using Ultracold Rubidium Atoms in an Optical Lattice</i>

S6.3 (16:30 – 18:30)**Chairs:** Nicolas Dupuis (France) and Alice Sinatra (France)

- S6.3.1** 16:30 – 17:00 T Mendes-Santos, G Giudici (Trieste, Italy), R Fazio (Trieste, Italy; Pisa, Italy), M Dalmonte (Trieste, Italy)
Measuring Entanglement in Many-Body Systems via Thermodynamics
- S6.3.2** 17:00 – 17:20 Y Machida, K Kasamatsu (Higashi-Osaka, Japan)
Quench Dynamics From Mott Insulator to Superfluid in the Bose-Hubbard Model: Application of the Inhomogeneous Kibble-Zurek Mechanism
- S6.3.3** 17:20 – 17:40 Y Ozaki (Osaka, Japan), K Nagao (Hamburg, Germany), I Danshita, K Kasamatsu (Osaka, Japan)
Semi-Classical Dynamics of a Dark Soliton in a One-Dimensional Lattice Bose Gas
- S6.3.4** 17:40 – 18:00 K Ihara, K Kasamatsu (Higashi-Osaka, Japan)
Transverse Instability and Disintegration of Domain Wall of Relative Phase in Coherently Coupled Two-Component Bose-Einstein Condensates

Tuesday, 9 July, 2019**S6.4 (11:15 – 12:30)****Chair:** Vladimir Yurovsky (Israel)

- S6.4.1** 11:15 – 11:45 K Chen (Piscataway, NJ, USA), N Prokof'ev, B Svistunov (Amherst MA, USA)
Trapping Collapse: Infinite Number of Repulsive Bosons Trapped by a Generic Short-Range Potential
- S6.4.2** 11:45 – 12:15 V Fleurov (Tel-Aviv, Israel), A Kuklov (New York NY, USA)
Phases and Phase Transitions in the Ensemble of Photons and Dye Molecules

S6.5 (14:00 – 16:30)**Chairs:** Anatoly Kuklov (USA) and Boris Svistunov (USA)

- S6.5.1** 14:00 – 14:30 K Ziegler (Augsburg, Germany), E Barkai (Ramat Gan, Israel)
Strong Fluctuations in Small Quantum Systems Due to Repeated Measurements
- S6.5.2** 14:30 – 15:00 M Pierce, X Leyronas, F Chevy (Paris, France)
Few vs Many-Body Physics of an Impurity Immersed in a Superfluid of Spin 1/2 Attractive Fermions

- S6.5.3** S Goto, I Danshita (Osaka, Japan)
 15:00 – 15:30 *Kondo Transport of Two-Orbital Fermi Gases*
- S6.5.4** Z Gong, N Kura (Tokyo, Japan), M Sato (Kyoto, Japan), M Ueda
 15:30 – 16:00 (Wako, Japan; Tokyo, Japan)
Topological Phenomena in Quench Dynamics

Wednesday, 10 July, 2019

S6.6 (11:15 – 12:30)

Chair: Klaus Ziegler (Germany)

- S6.6.1** J W Park, B Ko, Y Shin (Seoul, South Korea)
 11:15 – 11:45 *Kibble-Zurek Universality in a Strongly Interacting Fermi Superfluid*
- S6.6.2** V S Melezhik (Dubna, Russia; Moscow, Russia)
 11:45 – 12:15 *Quantum-Quasiclassical Model for Resonant and Cooling/Heating Processes in Atom-Ion Traps*

S6.7 (14:00 – 16:00)

Chairs: Xavier Leyronas (France) and Vladimir Melezhik (Russia)

- S6.7.1** V I Yukalov (Dubna, Russia; São Carlos, Brazil), A N Novikov
 14:00 – 14:30 (Quito, Ecuador), E P Yukalova (Dubna, Russia), V S Bagnato (São Carlos, Brazil)
Characteristic Quantities for Nonequilibrium Bose Systems
- S6.7.2** W J Kwon, G Del Pace, R Panza, F Scazza, G Roati (Sesto
 14:30 – 15:00 Fiorentino, Italy)
d.c. Josephson Effect in an Atomic Fermi Superfluid
- S6.7.3** J H V Nguyen (Houston TX, USA), M C Tsatsos (São Carlos,
 15:00 – 15:30 Brazil), D Luo (Houston TX, USA), A U J Lode (Basel, Switzerland;
 Vienna, Austria), G D Telles, V S Bagnato (São Carlos, Brazil), R
 G Hulet (Houston TX, USA)
Faraday Waves and Granulation in a Bose-Einstein Condensate
- S6.7.4** L Tomio, A Gammal (São Paulo, Brazil), F Kh Abdullaev (Tashkent,
 15:30 – 16:00 Uzbekistan), R K Kumar (São Paulo, Brazil)
Faraday Waves and Droplets in Quasi-One-Dimensional Bose-Gases

S6.8 (16:30 – 18:30)**Chairs:** Lauro Tomio (Brazil) and Oleg Prudnikov (Russia)

- S6.8.1** 16:30 – 17:00 P Naldesi (Grenoble, France), J P Gomez (Okinawa, Japan), V Dunjko (Boston MA, USA), H Perrin (Paris, France), M Olshanii (Boston MA, USA), L Amico (Catania, Italy), A Minguzzi (Grenoble, France)
Angular Momentum Fractionalization for Attracting Bosons in Ring-Shaped Potentials
- S6.8.2** 17:00 – 17:20 A D Tranter, H Slatyer, M Hush, A Leung, P Vernaz-Gris, K Paul (Canberra, Australia), H Yang, R Leon, A Dzurak (Sydney, Australia), P K Lam, B C Buchler, G T Campbell (Canberra, Australia)
Deep Learning Techniques for Optimising Cold Atoms and Quantum Systems
- S6.8.3** 17:20 – 17:40 O Prudnikov, A A Kirpichnikova, R Ya Ilenkov, A V Taichenachev, V I Yudin (Novosibirsk, Russia)
Universal Quantum Approach for Description Laser Cooling in Arbitrary 1D Light Field
- S6.8.4** 17:40 – 18:00 I Herrera, P Dyke, S Rauhut, C Khun, S Hoinka, P Hannaford, C Vale (Melbourne, Australia)
Studies of the 3D-2D Crossover in a Strongly Interacting Atomic Fermi Gas Using Bragg Spectroscopy

Thursday, 11 July, 2019**S6.9 (09:15 – 10:45)****Chair:** Jacques Tempere (Belgium)

- S6.9.1** 09:15 – 09:45 O E Alon (Haifa, Israel), R Beinke, L S Cederbaum (Heidelberg, Germany)
Many-Body Effects in the Excitation Spectrum and Variance of a Two-Dimensional Trapped Bose-Einstein Condensate
- S6.9.2** 09:45 – 10:15 P D Drummond, K L Ng, B Opanchuk, M D Reid (Melbourne, Australia)
Nonlocal Pair Correlations in a Higher-Order Bose Gas Soliton
- S6.9.3** 10:15 – 10:45 C C Chen, S Bennetts, R Gonzalez Escudero, J Samland, B Pasquiou, F Schreck (Amsterdam, The Netherlands)
A New Approach to Generate a CW Atom Laser

S6.10 (11:15 – 12:30)**Chair:** Ofir E. Alon (Israel)

- S6.10.1** W Van Alphen (Antwerpen, Belgium), H Takeuchi (Osaka, Japan),
 11:15 – 11:45 S N Klimin, J Tempere (Antwerpen, Belgium)
Decay of Giant Vortices and Solitons in a Superfluid Fermi Gas
- S6.10.2** K Giergiel, K Sacha (Kraków, Poland)
 11:45 – 12:15 *Condensed Matter Physics in Time Crystals*

S6.11 (14:00 – 16:00)**Chairs:** Peter Drummond (Australia) and Vyacheslav Yukalov (Russia)

- S6.11.1** T Sowiński (Warsaw, Poland)
 14:00 – 14:30 *Inter-Component Correlations in One-Dimensional Mass-Imbalanced Ultra-Cold Few-Fermion Mixtures*
- S6.11.2** P Jeszenszki (Auckland, New Zealand; Dunedin, New Zealand), H
 14:30 – 14:50 Luo (Stuttgart, Germany), A Alavi (Cambridge, UK; Stuttgart, Germany), J Brand (Auckland, New Zealand; Dunedin, New Zealand; Stuttgart, Germany)
Accurate Exact Diagonalization for Strongly Correlated Fermi Gases with the Transcorrelated Method
- S6.11.3** I-K Liu, S-G Gou (Changhua, Taiwan), H Takeuchi (Osaka, Japan)
 14:50 – 15:10 *Phase Diagram of Solitons in a Spin-1 Polar Bose-Einstein Condensate*
- S6.11.4** T Ohashi, S Kobayashi, Y Kawaguchi (Aichi, Japan)
 15:10 – 15:30 *Topological Phases in 1D Bosonic Bogoliubov Bands with Dynamical Instability*

Seminar 7: Quantum Information Science

Co-Chairs

Marco Genovese	L'Istituto Nazionale di Ricerca Metrologica , Turin, Italy
Yoon-Ho Kim	Pohang University of Science and Technology, Pohang, Korea
Sergei P. Kulik	Lomonosov Moscow State University, Moscow, Russia
Leong Chuan Kwek	Center for Quantum Technologies, Singapore, Singapore

Monday, 8 July, 2019

S7.1 (11:15 – 12:30)

Chair: Leong Chuan Kwek (Singapore)

S7.1.1 T Sturges, T Sturges, A Buraczewski (Warsaw, Poland), W R
11:15 – 11:35 Clements (Oxford, UK), J J Renema (Enschede, The Netherlands),
S W Nam, T Gerrits, A Lita (Boulder CO, USA), P P Rohde
(Sydney, Australia), W S Kolthammer, A Eckstein, I A Walmsley
(Oxford, UK)

*Photonic Quantum Simulations of SSH-Type Topological Insulators
with Perfect State Transfer*

S7.1.2 A Ferraro (Belfast, UK)
11:35 – 12:05 *Resource Theory of Quantum Non-Gaussianity and Wigner
Negativity* (invited talk)

S7.1.3 V Usenko (Olomouc, Czech Republic)
12:05 – 12:25 *Compensating Atmospheric Turbulence Effects in Continuous-
Variable Quantum Communication* (invited talk)

S7.2 (14:00 – 16:00)

Chair: Petr Marek (Czech Republic)

S7.2.1 T Golubeva, S Korolev, Yu Golubev (St.-Petersburg, Russia)
14:00 – 14:30 *Quantum Computations in Continuous Variables on an Ensemble
of Two-Node Clusters* (invited talk)

- S7.2.2** 14:30 – 14:45 V A Pivovarov (St.-Petersburg, Russia), A S Sheremet (Moscow, Russia; Paris, France), L V Gerasimov (St.-Petersburg, Russia; Moscow, Russia), J Lauarat (Paris, France), D V Kupriyanov (St.-Petersburg, Russia; Moscow, Russia)
On a Problem of Light-Atoms Interface in One-Dimensional Systems
- S7.2.3** 14:45 – 15:05 S Wengerowsky (Vienna, Austria), S K Joshi (Bristol, UK), F Steinlechner, H Hübel, R Ursin (Vienna, Austria)
An Entanglement-Based Wavelength Multiplexed Quantum Communication Network
- S7.2.4** 15:05 – 15:35 T Gehring, R Bruzaca (Kongens Lyngby, Denmark), H Kerdoncuff, M Ø Lassen (Hørsholm, Denmark), U L Andersen (Kongens Lyngby, Denmark)
Squeezed Light Enhanced Stimulated Raman Spectroscopy (invited talk)
- S7.2.5** 15:35 – 16:00 C-J Yeh, P-H Lin (Taoyuan, Taiwan), X Zhang (Toronto, Canada), O Kocharovskaya (College Station, TX, USA), W-T Liao (Taoyuan, Taiwan)
Spectral Control over γ -Ray Echo Memory (invited talk)

S7.3 (16:30 – 18:30)

Chair: Tatiana Golubeva (Russia)

- S7.3.1** 16:30 – 16:50 A Ferreri, V Ansari, C Silberhorn, P R Sharapova (Paderborn, Germany)
The Multimode Four-Photon Hong-Ou-Mandel Interference
- S7.3.2** 16:50 – 17:20 J Y Fan (Shenzhen, China)
Quantum Randomness (invited talk)
- S7.3.3** 17:20 – 17:40 P Marek, S Sefi, R Filip (Olomouc, Czech Republic)
Quantum Measurements of Nonlinear Quantities (invited talk)
- S7.3.4** 17:40 – 18:10 S Kechrimparis (Daejeon, South Korea), C Cropf (Pavia, Italy), F Wudarski (San Jose, USA), J Bae (Daejeon, South Korea)
Preserving a Measurement: Noisy Channel Coding of a Quantum Measurement (invited talk)

Tuesday, 9 July, 2019**S7.4 (11:15 – 12:30)****Chair:** Shigeki Takeuchi (Japan)

- S7.4.1** M Genovese (Turin, Italy)
11:15 – 11:45 *Robust Weak Measurements* (invited talk)
- S7.4.2** J Huh (Suwon, South Korea)
11:45 – 12:15 *Quantum Simulation Methods for Molecular Vibronic Spectra*
(invited talk)

S7.5 (14:00 – 16:30)**Chair:** Marco Genovese (Italy)

- S7.5.1** S Takeuchi (Kyoto, Japan)
14:00 – 14:25 *Nanofiber Integrated Single Light Emitters for Efficient Single Photon Sources* (invited talk)
- S7.5.2** Z-Y Zhou, Y-H Li, W-T Fang, B-S Shi (Hefei, China)
14:25 – 14:50 *Non-Classical Light Sources Generation and Processing Based on Silicon on Insulator Waveguide* (invited talk)
- S7.5.3** I V Dyakonov, I A Pogorelov, M Yu Saygin, I V Kondratiev, A A Kalinkin, P V Dyakonov, S A Evlashin, S A Mironov, S S Straupe, S P Kulik (Moscow, Russia)
14:50 – 15:15 *Reconfigurable Laser-Written Integrated Photonic Circuits for Linear Optical Quantum Computing* (invited talk)
- S7.5.4** E Polino, M Valeri (Rome, Italy), G Corrielli, A Crespi (Milan, Italy), N Spagnolo (Rome, Italy), R Osellame (Milan, Italy), F Sciarrino (Rome, Italy)
15:15 – 15:40 *Integrated Photonic Platform for Quantum Multiphase Estimation* (invited talk)
- S7.5.5** A Bramati (Paris, France)
15:40 – 16:10 *Integrated Single Photon Sources with Semiconductor Nanocrystals* (invited talk)
- S7.5.6** J Dai, V Leong, D A Kalashnikov, G Alagappan, T Hu (Singapore, Singapore), V A Davydov (Moscow, Russia), V N Agafonov (Tours, France), L A Krivitskiy (Singapore, Singapore)
16:10 – 16:30 *Coupling Quantum Emitters in Nanodiamonds to Microring Resonators for Integrated Quantum Photonics*

Wednesday, 10 July, 2019**S7.6 (11:15 – 12:30)****Chair:** Yoko Miyamoto (Japan)

- S7.6.1** Y S Teo, D Ahn, H Jeong (Seoul, South Korea), D Koutny, J Rehacek, Z Hradil (Olomouc, Czech Republic), F Bouchard, F Hufnagel, E Karimi (Ottawa, Canada), L L Sanchez-Soto, G Leuchs (Erlangen, Germany)
11:15 – 11:50 *Adaptive Compressive Tomography Without a Priori Information: Recent Results* (invited talk)
- S7.6.2** J D Biamonte (Moscow, Russia)
11:50 – 12:25 *Universal Variational Quantum Computation* (invited talk)

S7.7 (14:00 – 16:00)**Chair:** Jun-Hong An (China)

- S7.7.1** I Ruo-Berchera, E Losero, A Meda, A Avella, M Genovese (Turin, Italy)
14:00 – 14:30 *Quantum Enhanced Imaging Optimized in Realistic Conditions* (invited talk)
- S7.7.2** T Ono (Bristol, UK; Tokyo, Japan), N Samantaray, J G Rarity (Bristol, UK)
14:30 – 15:00 *Experimental Investigation of Single Photon Propagation; Interference of Position and Momentum* (invited talk)
- S7.7.3** Y Miyamoto (Chofu, Japan)
15:00 – 15:15 *The Misaligned Interferometer and The 2d Harmonic Oscillator* (invited talk)
- S7.7.4** L C Kwek (Singapore, Singapore)
15:15 – 15:40 *Robust Self-Testing, Non-Contextual Inequalities and Graph Theory* (invited talk)

S7.8 (16:30 – 18:30)**Chair:** Margaret Reid (Australia)

- S7.8.1** J-H An (Lanzhou, China)
16:30 – 17:00 *Retrieving Ideal Precision in Noisy Quantum Metrology by Non-Markovian Effect* (invited talk)
- S7.8.2** A A Rakhubovsky, R Filip (Olomouc, Czech Republic)
17:00 – 17:30 *Stroboscopic High-Order Nonlinearity in Optomechanics* (invited talk)

- S7.8.3** K G Katamadze, A V Pashchenko, S P Kulik (Moscow, Russia)
 17:30 – 18:00 *Broadband Single-Mode Biphoton Generation with a High Efficiency in a Thin Nonlinear Crystal with a High-Focused Pump* (invited talk)

Thursday, 11 July, 2019

S7.9 (09:15 – 10:45)

Chair: Luis Sanchez-Soto (Spain)

- S7.9.1** E Moreva, E Bernardi, P Traina, J Forneris, S Ditalia Tchernij, F Picollo, I P Degiovanni, V Carabelli, P Olivero, M Genovese (Turin, Italy)
 09:15 – 09:30 *Nanoscale Sensors Based on NV Centers in Diamonds for Metrological and Biological Applications* (invited talk)
- S7.9.2** S L Liu, Z Y Zhou, B S Shi (Hefei, China)
 09:30 – 10:00 *Generating and Frequency Converting a High-Dimensional Quantum State* (invited talk)
- S7.9.3** M V Fedorov (Moscow, Russia)
 10:00 – 10:20 *Quadrature Entanglement of Two-Mode Multiphoton States in Terms of the Schmidt-Decomposition Parameters* (invited talk)
- S7.9.4** S V Polyakov, I A Burenkov, M V Jabir, A Battou (Gaithersburg MD, USA)
 10:20 – 10:45 *Experimental Implementation of the First Quantum-Measurement-Inspired Classical Communication Protocol* (invited talk)

S7.10 (11:15 – 12:30)

Chair: Mikhail Fedorov (Russia)

- S7.10.1** J M Donohue, V Ansari, B Brecht, Ch Silberhorn (Paderborn, Germany), Z Hradil, J Rehacek, B Stoklasa, M Paur (Olomouc, Czech Republic), L L Sanchez-Soto (Erlangen, Germany; Madrid, Spain)
 11:15 – 11:50 *Quantum Limits on Time Measurements* (invited talk)
- S7.10.2** H Shin (Pohang, South Korea)
 11:50 – 12:20 *Unconventional Photon-Pair Generation in Optical Fibers* (invited talk)

S7.11 (14:00 – 16:00)**Chair:** Joonwoo Bae (South Korea)

- S7.11.1** 14:00 – 14:30 V S Malinovsky, S Santra, S Muralidharan (Adelphi MD, USA), L Jiang (New Haven CT, USA), C Monroe (College Park MD, USA)
Quantum Repeaters Based on Two-Species Trapped Ions
- S7.11.2** 14:30 – 15:00 D Lentrodt, K P Heeg, C H Keitel, J Evers (Heidelberg, Germany)
Ab Initio Few-Mode Theories for Quantum Potential Scattering Problems
- S7.11.3** 15:00 – 15:30 M D Reid (Melbourne, Australia), L Rosales-Zarate (León, Mexico), M Thenabadu, T Pham, L Drummond, G-L Cheng (Melbourne, Australia)
Testing Macroscopic Realism (invited talk)
- S7.11.4** 15:30 – 16:00 D A Kronberg (Moscow, Russia)
Coherence of Quantum Ensemble As a Dual to Uncertainty for a Single Observable

Seminar 8: Fiber Optics

Co-Chairs

Sergey A. Babin

Institute of Automation and Electrometry,
Novosibirsk, Russia

Evgueni M. Dianov

Fiber Optics Research Center, Moscow, Russia

Wednesday, 10 July, 2019

S8.1 (11:15 – 12:30)

Chair: Harith Ahmad (Malaysia)

S8.1.1 P F Ma, L Huang, Y Miao, W Liu, T Y Hou, W C Lai, P Zhou
11:15 – 11:40 (Changsha, China)

Kilowatt-Level Hybrid Ytterbium-Raman Nonlinear Fiber Amplifier with Narrow Linewidth and Near-Diffraction-Limited Beam Quality
(invited talk)

S8.1.2 S R Abdullina, M I Skvortsov, A A Wolf, E V Podivilov, S A Babin
11:40 – 12:05 (Novosibirsk, Russia), S Wabnitz (Novosibirsk, Russia; Rome, Italy),
N Ghofraniha, S Gentilini, C Conti (Rome, Italy)

Random Raman Lasing Based on Random FBG Array in Fibers of Different Types

S8.1.3 L Huang, W C Lai, P F Ma, R T Su, M Jiang, C Li, J Wu, Z L
12:05 – 12:25 Chen, Y X Ma, P Zhou (Changsha, China)

Power Scaling of Linearly Polarized ns Fiber Laser with Narrow Linewidth and Near-Diffraction-Limited Beam Quality Based on Active Tapered Fiber

S8.2 (14:00 – 16:00)

Chair: Sergey Babin (Russia)

S8.2.1 H Ahmad, Z C Tiu, K Thambiratnam (Kuala Lumpur, Malaysia)
14:00 – 14:30 *Recent Advances in Pulsed Fiber Lasers Using Transition Metal Dichalcogenide as Saturable Absorbers* (invited talk)

S8.2.2 T Wang, W C Lai, J Wang, J Wu, P F Ma, P Zhou (Changsha,
14:30 – 14:50 China)

Mode-Locked Yb-Doped Fiber Laser Based on Indium Monosulfide (InS) Saturable Absorber

- S8.2.3** 14:50 – 15:10 O Pottiez, O S Torres-Muñoz, Y Bracamontes-Rodriguez, J P Lauterio-Cruz, H E Ibarra-Villalon (León, Mexico), J C Hernandez-Garcia (Salamanca, Mexico), M Bello-Jimenez (San Luis Potosí, Mexico), E A Kuzin (Puebla, Mexico)
Real-Time Spectral and Temporal Characterization of Complex Multi-Soliton Dynamics in a Dual-Wavelength Passively Mode-Locked Fiber Laser
- S8.2.4** 15:10 – 15:30 A M Khegai, S V Firstov, K E Riumkin (Moscow, Russia), F V Afanasiev (Nizhny Novgorod, Russia), M A Melkumov (Moscow, Russia)
Bismuth Doped Fiber Laser Operating at 1.3 μm Q-Switched by AOM
- S8.2.5** 15:30 – 15:45 M Z Samion, H Ahmad (Kuala Lumpur, Malaysia)
Pulse Generation in Thulium-Doped Fiber Laser Using MoWS₂ with a Tunable-Wavelength Output
- S8.2.6** 15:45 – 16:00 S A Reduan, H Ahmad, R Ramli (Kuala Lumpur, Malaysia)
54 nm Wide-Band Tunable Passively Q-Switched Thulium-Fluoride Fiber (TFF) Laser Using Tungsten Sulfide Selenide (WSSe) as Saturable Absorber

S8.3 (16:30 – 18:30)

Chair: Olivier Pottiez (Mexico)

- S8.3.1** 16:30 – 16:55 T Hou, P Ma, T Wang, L Huang, W Lai, P Zhou (Changsha, China)
Deep Learning-Based Phase Control Method for Coherent Beam Combining and Its Application in Generating Orbital Angular Momentum Beams
- S8.3.2** 16:55 – 17:20 A G Kuznetsov, I N Nemov, A A Wolf, S I Kablukov, S A Babin (Novosibirsk, Russia), Y Chen, T Yao, J Leng, P Zhou (Changsha, China)
Beam Cleaning Effects in Multimode GRIN-Fiber Raman Lasers and Amplifiers
- S8.3.3** 17:20 – 17:50 K Larin (Houston TX, USA)
Evaluating Changes in the Murine Fetal Brain Vasculature Due to Prenatal Alcohol and Cannabinoid Exposure Using Optical Coherence Tomography (invited talk)

Seminar 9: Extreme Light Technologies, Science, and Applications

Co-Chairs

Antonino Di Piazza	Max Planck Institute for Nuclear Physics, Heidelberg, Germany
Alexander Fedotov	National Research Nuclear University MEPhI, Moscow, Russia
Christoph Keitel	Max Planck Institute for Nuclear Physics, Heidelberg, Germany
Chang Hee Nam	Center for Relativistic Laser Science, Gwangju, Korea

Monday, 8 July, 2019

S9.1 (11:15 – 12:30)

Chair: Antonino Di Piazza (Germany)

S9.1.1 C M Kim, K H Pae, V B Pathak, C-M Ryu, C Aniculaesei, C I Hojbota, H T Kim, Y J Lee, J W Yoon, J H Sung, S K Lee, C H Nam (Gwangju, South Korea)
11:15 – 11:45 *Toward Experiments on Strong-Field Quantum Electrodynamics with Petawatt Lasers* (invited talk)

S9.1.2 M Marklund, A Gonoskov (Göteborg, Sweden)
11:45 – 12:10 *Particle and Radiation Dynamics in Strong Fields* (invited talk)

S9.1.3 J K Koga (Kizugawa, Kyoto, Japan), M Murakami (Osaka, Japan),
12:10 – 12:30 A V Arefiev (La Jolla CA, USA), Y Nakamiya (Bucharest, Romania),
A S Pirozhkov, T Zh Esirkepov (Kizugawa, Kyoto, Japan), S V Bulanov (Kizugawa, Kyoto, Japan; Prague, Czech Republic)
Burst Intensification by Singularity Emitting Radiation (BISER) for Imaging Micro-Bubble Implosions (MBI) (invited talk)

S9.2 (14:00 – 16:00)

Chair: Mattias Marklund (Sweden)

S9.2.1 A Gonoskov (Gothenburg, Sweden)
14:00 – 14:25 *Employing Machine Learning in Theoretical and Experimental Studies of High-Intensity Laser-Plasma Interactions* (invited talk)

- S9.2.2** B Qiao, X F Shen, X T He (Beijing, China)
 14:25 – 14:55 *Advances in Laser-Driven Ion Acceleration and Its Application in Proton Radiography* (invited talk)
- S9.2.3** M Zakova, J Psikal (Prague, Czech Republic), I Tsygvintsev (Prague, Czech Republic; Moscow, Russia), S V Bulanov, F Grepl, D Margarone (Prague, Czech Republic)
 14:55 – 15:15 *Laser-Driven Ion Acceleration: Slightly Above Critical Targets and the Role of Laser Prepulse*
- S9.2.4** K Nakamura (Berkeley CA, USA)
 15:15 – 15:40 *Electron Beam Acceleration to 8 GeV with Laser-Assisted Capillary Discharge Waveguides* (invited talk)

S9.3 (16:30 – 18:30)

Chair: Ben King (UK)

- S9.3.1** S P Kim (Gwangju, South Korea; Kunsan, South Korea)
 16:30 – 17:00 *Equivalence of Worldline Instanton Method and Phase-Integral Method* (invited talk)
- S9.3.2** Q Su (Normal IL, USA), Q Z Lv (Heidelberg, Germany), S S Dong (Normal IL, USA), Y T Li (Beijing, China), R Grobe (Normal IL, USA)
 17:00 – 17:25 *Hund Conjecture for Pair Creation and its Extensions* (invited talk)
- S9.3.3** C K Dumlu (Bucharest, Romania)
 17:25 – 17:50 *Vacuum Decay via Complex Paths* (invited talk)
- S9.3.4** Q Z Lv (Heidelberg, Germany)
 17:50 – 18:20 *The Computational-QFT Approach in QED Processes with Strong Laser Fields* (invited talk)

Tuesday, 9 July, 2019

S9.4 (11:15 – 12:30)

Chair: Anton Ilderton (UK)

- S9.4.1** B Xie, Z Li, O Olugh (Beijing, China), M Ababekri (Urumqi, China)
 11:15 – 11:40 *Effects of Polarization and Frequency Chirping on Pair Production in Strong Fields* (invited talk)
- S9.4.2** H Taya (Shanghai, China)
 11:40 – 12:00 *Franz-Keldysh Effect in Strong-Field QED*
- S9.4.3** S Tang, B King, A Ilderton (Plymouth, UK)
 12:00 – 12:15 *Single-Photon Electron-Positron Annihilation in a Plane Laser Pulse Background*

S9.4.4 K Krajewska, F Cajiao Vélez, J Z Kamiński (Warsaw, Poland)
 12:15 – 12:35 *High-Energy Ionization – a Tool for Laser Pulse Diagnostics* (invited talk)

S9.5 (14:00 – 16:30)

Chair: Victor Dinu (Romania)

S9.5.1 A Ilderton (Plymouth, UK)
 14:00 – 14:25 *On the Conjectured Breakdown of SFQED at High Quantum Nonlinearity* (invited talk)

S9.5.2 A Di Piazza (Heidelberg, Germany)
 14:25 – 14:55 *On the High-Energy Behavior of Strong-Field QED in an Intense Plane Wave* (invited talk)

S9.5.3 A M Fedotov, A A Mironov (Moscow, Russia)
 14:55 – 15:15 *Re-Summation of QED Radiative Corrections in a Strong Constant Crossed Field* (invited talk)

S9.5.4 T G Blackburn (Gothenburg, Sweden), A Ilderton (Plymouth, UK),
 15:15 – 15:40 M Marklund (Gothenburg, Sweden), C P Ridgers (York, UK)
Reaching Supercritical Field Strengths With Ultraintense Lasers (invited talk)

S9.5.5 V Dinu (Bucharest, Romania), G Torggrimsson (Jena, Germany)
 15:40 – 16:05 *Higher-Order Processes in Strong Fields* (invited talk)

Wednesday, 10 July, 2019

S9.6 (11:15 – 12:30)

Chair: Tongpu Yu (China)

S9.6.1 S G Bochkarev, A V Brantov, D A Gozhev (Moscow, Russia), N I
 11:15 – 11:30 Busleev (Moscow, Russia; Samara, Russia), S I Kudryashov (St.-
 Petersburg, Russia; Moscow, Russia), A B Savel'ev, V Yu Bychenkov
 (Moscow, Russia)
Nanowire and Sheet Array Target Interacting with Ultrashort Intense Laser as a Source of Thermonuclear Neutrons (invited talk)

S9.6.2 F Queisser, R Schützhold (Dresden, Germany; Duisburg, Germany)
 11:30 – 11:50 *Dynamically Assisted Nuclear Fusion* (invited talk)

S9.6.3 E G Gelfer (Moscow, Russia; Prague, Czech Republic), A M Fedotov
 11:50 – 12:10 (Moscow, Russia), O Klimo, S Weber (Prague, Czech Republic)
Absorption and Opacity Threshold for a Thin Foil in a Strong Laser Field (invited talk)

- S9.6.4** W Ma (Beijing, China), I J Kim (Gwangju, South Korea), J Yu (Beijing, China), I W Choi (Gwangju, South Korea), J Schreiber (München, Germany), X Yan (Beijing, China), C H Nam (Gwangju, South Korea)
 12:10 – 12:35 *Applications of Carbon Nanotube Foams as Near-Critical-Density Targets for Laser-Driven Ion Acceleration and X-Ray/Gamma-Ray Generation* (invited talk)

S9.7 (14:00 – 16:00)

Chair: Felix Mackenroth (Germany)

- S9.7.1** A V Bashinov (Nizhny Novgorod, Russia), G Leuchs (Erlangen, Germany; Nizhny Novgorod, Russia)
 14:00 – 14:20 *Pair Plasma Generation in a Magnetic Dipole Wave of Extreme Intensity* (invited talk)
- S9.7.2** Y Y Chen (Heidelberg, Germany), P L He (Shanghai, China), R Shaisultanov, K Z Hatsagortsyan, C H Keitel (Heidelberg, Germany)
 14:20 – 14:40 *Polarized Positron Beams via Intense Two-Color Laser Pulses* (invited talk)
- S9.7.3** E S Efimenko, A V Kim (Nizhny Novgorod, Russia)
 14:40 – 15:10 *Towards Extreme States of Electron-Positron Pair Plasma Through QED Cascading* (invited talk)
- S9.7.4** J Magnusson (Gothenburg, Sweden), A Gonoskov (Nizhny Novgorod, Russia; Gothenburg, Sweden), M Marklund (Gothenburg, Sweden), T Zh Esirkepov, J K Koga, K Kondo, M Kando (Kyoto, Japan), S V Bulanov (Kyoto, Japan; Moscow, Russia; Prague, Czech Republic), G Korn (Prague, Czech Republic), C G R Geddes, C B Schroeder, E Esarey, S S Bulanov (Berkeley CA, USA)
 15:10 – 15:25 *Interaction of Electron Beams with Multiple-Colliding Laser Pulses in the QED Regime* (invited talk)
- S9.7.5** T P Yu (Changsha, China), X L Zhu (Changsha, China; Shanghai, China), K Liu (Changsha, China), Z M Sheng (Glasgow, UK; Shanghai, China), J M Ouyang, F Q Shao (Changsha, China)
 15:25 – 15:50 *Bright γ -Ray Emission and Dense Positron Production in Near-Critical-Density Plasmas* (invited talk)

S9.8 (16:30 – 18:30)

Chair: Alexander Fedotov (Russia)

- S9.8.1** V I C Dinu (Bucharest, Romania), G Torgrimsson (Jena, Germany)
 16:30 – 17:00 *On Second-Order Nonlinear QED Processes in Strong Plane-Wave Laser Pulses* (invited talk)

- S9.8.2** F Mackenroth (Dresden, Germany)
17:00 – 17:20 *Nonlinear Quantum Electrodynamics in Ultra-High Intensity Laser-Plasma Interactions* (invited talk)
- S9.8.3** P A Krachkov (Heidelberg, Germany; Novosibirsk, Russia), A Di Piazza (Heidelberg, Germany), A I Milstein (Novosibirsk, Russia)
17:20 – 17:35 *High-Energy Bremsstrahlung on Atoms in a Laser Field* (invited talk)
- S9.8.4** I A Aleksandrov (St.-Petersburg, Russia), G Plunien (Dresden, Germany), V M Shabaev (St.-Petersburg, Russia)
17:35 – 17:55 *Photon Emission in Strong Fields Beyond the Locally-Constant Field Approximation* (invited talk)

Thursday, 11 July, 2019

S9.9 (09:15 – 10:45)

Chair: Evgeny Gelfer (Czech Republic)

- S9.9.1** K Homma, Y Kirita (Higashi-Hiroshima, Japan)
09:15 – 09:40 *Stimulated Radar Collider Toward a Laboratory Search for a Dark Energy Candidate* (invited talk)
- S9.9.2** B King (Plymouth, UK), B M Dillon (Ljubljana, Slovenia), K A Beyer, G Gregori (Oxford, UK)
09:40 – 10:00 *Decay of Massive Axion-Like-Particles in Quasi-Static Backgrounds* (invited talk)
- S9.9.3** M Wen, M Tamburini, C H Keitel (Heidelberg, Germany)
10:00 – 10:25 *Polarized Electron Beam Acceleration in Laser Wakefield* (invited talk)
- S9.9.4** F Wan, J X Li, Y F Li (Xi'an, China), R Shaisultanov, K Z Hatsagortsyan, C H Keitel (69117 Heidelberg, Germany)
10:25 – 10:45 *Ultrarelativistic Electron and Positron Beams Polarization in Single-Shot Interaction with an Ultraintense Laser Pulse and The Polarization Determination* (invited talk)

S9.10 (11:15 – 12:30)

Chair: Chul Min Kim (South Korea)

- S9.10.1** S Weber (Prague, Czech Republic)
11:15 – 11:40 *The ELI-Beamlines High-Field Installation and Some Flagship Experiments* (invited talk)
- S9.10.2** D Doria (Bucharest, Romania)
11:40 – 12:05 *Overview of ELI-NP Status and Commissioning Experiments with The 10 PW Class-Laser* (invited talk)

- S9.10.3** S-Y Kim, M Chung (Ulsan, South Korea)
12:05 – 12:25 *AWAKE: A Proton Beam-Driven Plasma Wakefield Acceleration Experiments at CERN* (invited talk)
- S9.10.4** F Grepl, D Margarone, A Velyhan, F Schillaci, L Giuffrida, P Lutoslawski, M Tryus, T Chagovets, C Lazzarini, F Nawaz, B Odlozilik, G Korn, V Scuderi (Prague, Czech Republic), H Ahmed, A Alejo, D Doria, P Martin, A McIlvenny, B Greenwood, G Milluzzo, S Kar, M Borghesi (Belfast, UK), D Chatain, D Garcia, P Bonnay, A Girard, F Viargues (Grenoble, France), D C Carroll, M Notley, P Jones (Didcot, UK)
12:25 – 12:35 *Pure Proton Beams Generated from Cryogenic Solid-Hydrogen Ribbon for High Repetition Rate Sample Irradiation at ELI Beamlines*

Poster Session

Seminar 1: Modern Trends in Laser Physics

- P.S1.1 V V Sukharnikov, O V Tikhonova (Moscow, Russia)
*Influence of Dipole-Dipole Interaction on Formation of Electronic
 Excitations in a Semiconductor Quantum Well System*

Seminar 2: Strong Field & Attosecond Physics

- P.S2.1 M C Suster, J Derlikiewicz, K M Kotur, F Cajiao Vélez, K
 Krajewska, J Z Kamiński (Warsaw, Poland)
Dynamical Mass Generation in Graphene by Bicircular Laser Fields
- P.S2.2 V I Usachenko, P E Pyak (Tashkent, Uzbekistan)
*Low-Energy Structure(s) in Photoelectron Spectra Due to Laser-
 Induced Rescattering in Above-Threshold Ionization*
- P.S2.3 X Y Yu (Beijing, China), Y Q Liu (Beijing, China; Taiyuan, China)
Strong-Field Tunneling Ionization in the Relativistic Regime
- P.S2.4 Y Q Fang, Y Q Liu (Beijing, China)
*Strong-Field Ionization of Ar Atoms with Cross Linearly Polarized
 Two-Color Laser Field*
- P.S2.5 P Ge, M Han, Y K Deng, Q H Gong (Beijing, China), Y Q Liu
 (Beijing, China; Taiyuan, China)
*Universal Description of Attoclock with Two-Color Corotating
 Circular Fields*
- P.S2.6 R Sun, X Lai, S Yu, Y Wang, S Xu, W Quan, X Liu (Wuhan,
 China)
*Tomographic Extraction of the Internuclear Separation Based on
 Two-Center Interference with Aligned Diatomic Molecules*

Seminar 3: Laser Biomedical Applications

- P.S3.1 S V Kireev, S V Suganev, S L Shnyrev (Moscow, Russia)
*Using of Laser Fluorescence Method Based on Copper-Vapor Laser
 (578.2 nm) for Molecular Iodine Detecting in Gaseous Media*
- P.S3.2 S V Kireev, A A Kondrashov, S L Shnyrev (Moscow, Russia)
*Using Empirical Mode Decomposition for Increasing The Sensitivity
 of $^{13}\text{CO}_2$ Detecting in the Human Exhaled Breath by TDLAS Method*

Seminar 4: Physics of Lasers

- P.S4.1 J Yuan, L Wang, L Xiao, S Jia (Taiyuan, China)
Two-Photon Excitation of Rb $5S_{1/2}$ - $5D_{5/2}$ Using a Single Laser Operating at 778 nm

Seminar 5: Nonlinear Optics & Spectroscopy

- P.S5.1 J Yuan, L Wang (Taiyuan, China), Y Zhang (Chofu, Japan), L Xiao, S Jia (Taiyuan, China)
Observation of Electromagnetically Induced Talbot Effects in a Coherent Atomic System
- P.S5.2 A M Bratu, C Popa, C Matei, D C Dumitras (Bucharest, Romania)
Photoacoustic Detection of Ethylene and Ethanol Influence in Shelf-Life of Fruit
- P.S5.3 Q Su, D Lu, C Y Chu, Z Zhang, W W Liu (Tianjin, China)
Control of THz Pulse Polarization During Femtosecond Laser Filament in Air
- P.S5.4 Z Zhang, W Liu (Tianjin, China)
Realization Of THz Vortex with Spiral Zone Plate Fabricated by Laser Induced Filamentation
- P.S5.5 D Lu, N Zhang, W W Liu (Tianjin, China)
Generation of Colorful Light Pulses by Femtosecond Bessel Laser Beam
- P.S5.6 A A Silaev, A A Romanov, N V Vvedenskii (Nizhny Novgorod, Russia)
Control of Mid-IR Waveforms Generated During Gas Ionization by Two-Color Laser Pulses

Seminar 6: Physics of Cold Trapped Atoms

- P.S6.1 V I Yukalov (Dubna, Russia; São Carlos, Brazil)
From Optical Lattices to Quantum Crystals
- P.S6.2 A Abo Zalam (St.-Petersburg, Russia), D Efimov (Kraków, Poland), K Miculis (Moscow, Russia), M Bruvelis (Thuwal , Saudi Arabia), N N Bezuglov (St.-Petersburg, Russia), A Ekers (Thuwal , Saudi Arabia)
Strong Enhancement of Penning Ionization in Cold Rydberg Gases: Optimal Asymmetric Pairs for Alkali-Metal Atoms

- P.S6.3 R Yasuda, T Mashimo, M Abe, S Tojo (Tokyo, Japan)
Two-Photon Spectroscopy of 5S-5D Transition of Ultracold Rubidium Atoms in a Magnetic Field
- P.S6.4 S Seta, T Mashimo, M Abe, S Tojo (Tokyo, Japan)
Spectroscopy of Ultracold Rubidium Atoms via Optical Double Resonance in an Optical Trap

Seminar 7: Quantum Information Science

- P.S7.1 Yu I Bogdanov, D V Fastovets, N A Bogdanova, V F Lukichev (Moscow, Russia)
Quantum Information Aspects of Boolean Algebra
- P.S7.2 G V Avosopiants, K G Katamadze, N A Bogdanova, Yu I Bogdanov, S P Kulik (Moscow, Russia)
The Photon Number Distribution of a Multimode Thermal State Subsystem Under Multiple Photon Annihilation
- P.S7.3 S Balybin, O Tikhonova (Moscow, Russia)
Properties of Non-Classical Light and Semiconductor Quantum Well Interacting in a Cavity
- P.S7.4 A Macarone Palmieri, E Kovlakov (Moscow, Russia), F Bianchi (Milan, Italy), D Yudin, S Straupe, J Biamonte, S Kulik (Moscow, Russia)
Experimental Neural Network Enhanced Quantum Tomography

Seminar 8: Fiber Optics

- P.S8.1 B I Denker, B I Galagan, V A Kamynin, A A Ponosova, S E Sverchkov, S L Semjonov, V B Tsvetkov (Moscow, Russia)
Femtosecond Laser Based on 7-cm-Long Heavily Er-Doped Multicomponent Fiber

Seminar 9: Extreme Light Technologies, Science, and Applications

- P.S9.1 L-X Hu, T-P Yu, F-Q Shao, W-Q Wang, J-M Ouyang, K Liu (Changsha, China)
Investigation of an Intense Laguerre-Gaussian Laser Pulse Interaction with a Nanoslice
- P.S9.2 C S Choi, S E Mun, B H Lee (Seoul, South Korea)
Multi-Level Dynamic Hologram Through Metasurface Based on Phase Change Nanorod