

LPHYS'14

23th International Laser Physics Workshop
July 14–18, 2014, Sofia, Bulgaria

PROGRAM



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23st International Laser Physics Workshop

July 14–18, 2014, Sofia, Bulgaria

ORGANIZED BY:



*A.M. Prokhorov General Physics Institute,
Russian Academy of Sciences (RAS), Moscow, Russia
Institute of Electronics, Bulgarian Academy of Sciences,
Sofia, Bulgaria*

Laser Physics, international journal

Laser Physics Letters, international journal

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Moscow, Russia*

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Background

The twenty third annual International Laser Physics Workshop (LPHYS'14) will be held from July 14 to July 18, 2014, in the city of Sofia, Bulgaria, at the Ramada Sofia Hotel, hosted by Institute of Electronics, Bulgarian Academy of Sciences. LPHYS'14 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 and Prague 2013. The total number of participants is expected to be about 400. In the past, participation was typically from over 30 countries.

The LPHYS'14 Organizing and Steering Committees have announced their decision that this year LPHYS'14 will be dedicated to paying tribute to two major events:

50th anniversary of 1964 Nobel Prize in physics

The Committees would like to remind all the participants that this year the scientific world will celebrate the 50th anniversary of the Nobel Prize in physics awarded in 1964 to three brilliant scientists **Charles H Townes**, **Nikolay G Basov** and **Alexander M Prokhorov** "*for fundamental work in the field of quantum electronics, which has led to the construction of oscillators and amplifiers based on the maser-laser principle*".

145th anniversary of the establishment of the Bulgarian Academy of Sciences

The Bulgarian Academy of Sciences (BAS) has been a successor of the Bulgarian Literary Society, founded in 1869. The Academy is the Bulgarian nation's foremost scientific organization that is responsible for organizing and directing basic and applied research conducted in Bulgaria in the fields of natural, technical and social sciences. BAS also participates in supervising educational activities in the country and in formulating the national policy for science and technology.

Scientific Seminars

The Workshop consists of the following seminars and symposium (organized by the respective co-chairs), which feature invited plenary talks, invited lectures, contributed and poster reports.

The official language of the Workshop is English.

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|------------------|--|
| Seminar 1 | Modern Trends in Laser Physics |
| Co-Chairs: | <i>Olga Kocharovskaya (USA), Kirill A. Prokhorov (Russia)</i> |
| Seminar 2 | Strong Field & Attosecond Physics |
| Co-Chairs: | <i>Wilhelm Becker (Germany), Jens Biegert (Spain), Mikhail V. Fedorov (Russia)</i> |
| Seminar 3 | Biophotonics |
| Co-Chairs: | <i>Ekaterina Borisova (Bulgaria), Sergey A. Gonchukov (Russia), Jürgen Lademann (Germany)</i> |
| Seminar 4 | Physics of Lasers |
| Co-Chairs: | <i>Mikhail Kalashnikov (Germany), Andrei B. Savel'ev (Russia), Ivan A. Shcherbakov (Russia)</i> |
| Seminar 5 | Nonlinear Optics & Spectroscopy |
| Co-Chairs: | <i>See Leang Chin (Canada), Yuri Kivshar (Australia), Lyubomir Kovachev (Bulgaria), Vladimir A. Makarov (Russia)</i> |
| Seminar 6 | Physics of Cold Trapped Atoms |
| Co-Chairs: | <i>Vanderlei S. Bagnato (Brazil), Vyacheslav I. Yukalov (Russia), Eugene Zaremba (Canada)</i> |
| Seminar 7 | Quantum Information Science |
| Co-Chairs: | <i>Marco Genovese (Italy), Sergey P. Kulik (Russia), Leong Chuan Kwek (Singapore)</i> |
| Seminar 8 | Fiber Optics |
| Co-Chairs: | <i>Sergey A. Babin (Russia), Evgueni M. Dianov (Russia)</i> |
| Symposium | Extreme Light Technologies, Science, and Applications |
| | Co-Chairs: <i>G rard Mourou (France), Nikolay B. Narozhny (Russia), Georg Korn (Czech Republic)</i> |

Meeting Time-Table and Location of the Events

Hall # 1, Ramada Sofia Hotel, Hall RUBY
 Hall # 2, Ramada Sofia Hotel, Hall EUROPE I
 Hall # 3, Ramada Sofia Hotel, Hall EUROPE II
 Hall # 4, Ramada Sofia Hotel, Hall MERCAN
 Hall # 5, Hotel Sofia Plaza, Hall SOFIA
 Hall # 6, Hotel Sofia Plaza, Hall SERDICA
 Hall # 7, Hotel Budapest, Hall PANONIA

Monday, July 14, 2014							
09.45-10.30	Opening Session (Hall # 1)						
10.30-11.00	Coffee Break						
11.00-12.00	Keynote Session (Hall # 1)						
12.00-13.30	Lunch Break						
	Hall # 1	Hall # 2	Hall # 3	Hall # 4	Hall # 5	Hall # 6	Hall # 7
13.30-15.45	Seminar 1.1	Seminar 6.1	Seminar 2.1	Seminar 3.1	Seminar 7.1	Seminar 5.1	Symposium S.1
15.45-16.15	Coffee Break						
16.15-19.00	Seminar 1.2	Seminar 6.2	Seminar 2.2	Seminar 3.2	Seminar 7.2	Seminar 5.2	Symposium S.2
20.00-22.00	Welcome Party (Ramada Sofia Hotel, Hall DIAMOND)						

Tuesday, July 15, 2014							
09.15-10.45	Plenary Session 1 (Hall # 1)						
10.00-10.45	Plenary Session 2 (Hall # 1)						
10.45-11.15	Coffee Break						
11.15-12.15	Sponsors Talks (Hall # 1)						
12.15-13.30	Lunch Break						
	Hall # 1	Hall # 2	Hall # 3	Hall # 4	Hall # 5	Hall # 6	Hall # 7
13.30-15.45	Seminar 1.3	Seminar 6.3	Seminar 2.3	Seminar 4.1	Seminar 7.3	Seminar 5.3	Symposium S.3
15.45-16.15	Coffee Break						
16.15-19.00	Seminar 1.4	Seminar 6.4	Seminar 2.4	Seminar 8.1	Seminar 7.4	Seminar 5.4	Symposium S.4
19.45-21.00	Poster Session (Ramada Sofia Hotel, Hall DIAMOND)						

Wednesday, July 16, 2014							
09.15-10.00	Plenary Session 3 (Hall # 1)						
10.00-10.45	Plenary Session 4 (Hall # 1)						
10.45-11.15	Coffee Break						
11.15-12.00	Plenary Session 5 (Hall # 1)						
12.00-13:30	Lunch Break						
	Hall # 1	Hall # 2	Hall # 3	Hall # 4	Hall # 5	Hall # 6	Hall # 7
13.30-15.45	Seminar 1.5	Seminar 6.5	Seminar 2.5	Seminar 8.2	Seminar 7.5	Seminar 5.5	Symposium S.5
15.45-16.15	Coffee Break						
16.15-19.00	Seminar 1.6	Seminar 6.6	Seminar 2.6	Seminar 8.3	Seminar 7.6	Seminar 5.6	Symposium S.6
20:00-23:00	Official Dinner (National Museum of History – Sofia) <i>departure from Hotel Ramada Sofia – 19:15</i>						

Thursday, July 17, 2014							
09.00-09.45	Plenary Session 6 (Hall # 1)						
09.45-10.30	Plenary Session 7 (Hall # 1)						
10.30-11.00	Coffee Break						
	Hall # 1	Hall # 2	Hall # 3	Hall # 4	Hall # 5	Hall # 6	Hall # 7
11.00-12.30	Seminar 1.7	Seminar 6.7	Seminar 2.7		Seminar 7.7		
12.30-14.00	Lunch Break						
14.00-16.30	Seminar 1.8	Seminar 6.8	Seminar 2.8		Seminar 7.8		
16.30-17.00	Coffee Break						
17.00-20.00	Seminar 1.9	Seminar 6.9	Seminar 2.9		Seminar 7.9		

Friday, July 18, 2014							
	Hall # 1	Hall # 2	Hall # 3	Hall # 4	Hall # 5	Hall # 6	Hall # 7
09.00-10.30	Seminar 1.10	Seminar 6.10	Seminar 2.10		Seminar 7.10		
10.30-11.00	Coffee Break						
11.00-12.30	Seminar 1.11	Seminar 6.11	Seminar 2.11		Seminar 7.11		
12.30-14.00	Lunch Break						
14.00-15.45	Seminar 1.12	Seminar 6.12	Seminar 2.12	Seminar	Seminar 7.12		
15.45-16.15	Coffee Break						
16.15-18.00	Seminar 1.13	Seminar 6.13	Seminar 2.13		Seminar 7.13		
18.00-18.30	Closing session						

Opening Session

- 09.45-09.55 **Vyacheslav Yukalov** (Russia) Conference Steering Committee
- 09.55-10.10 **Rosen Plevneliev**, President of the Republic of Bulgaria
- 10.10-10.25 **Stefan Vodenicharov**, President of the Bulgarian Academy of Sciences
- 10.25-10.30 **Sanka Gateva** (Bulgaria), Chairperson, LPHYS'14

Keynote Session

- 11.00-11.30 **Elsa Garmire** (Hanover, NH, USA)
The Impact of Dr. Townes' Work in Nonlinear Optics
- 11.30-12.00 **Michael Bass** (Orlando, FL, USA)
Lasers: Reminiscing and Speculating

Plenary Sessions

- PS1 **Paras N. Prasad** (Buffalo, NY, USA)
Biophotonics: Challenges, Opportunities and Impact on Global Healthcare
- PS2 **Alexander M. Sergeev** (Nizhny Novgorod, Russia)
New Prospects of Extreme Light Physics with Mega-Science Project XCELS
- PS3 **Ruxin Li** (Shanghai, China)
Development of 10 PW Ultra-High Peak-Power Laser Facility at SIOM
- PS4 **Elisabeth Giacobino** (Paris, France)
Quantum Fluid Properties of Light in Microcavities
- PS5 **Boris Svistunov** (Amherst, MA, USA)
Classical Matter Field: From Einstein to Gross-Pitaevskii and Back to Einstein

PS6 **Philippe Grangier** (Palaiseau, France)
*Quantum Optics and Quantum Communications using
Non-Gaussian States of Light*

PS7 **Alexander Dreischuh** (Sofia, Bulgaria),
*Singular Optics Revisited: Algebraic Operations with
Topological Charges of Optical Vortices*

Closing Session (Friday, July 18)

18.00-18.30 **Vyacheslav Yukalov** (Russia)

Seminar 1

Modern Trends in Laser Physics

Monday, July 14

Seminar 1.1

Chair: G. Leuchs (Germany)

- 13.30-14.00 1.1.1 M.D. Lukin (Cambridge, MA, USA)
New interface between quantum optics and nanoscience
- 14.00-14.25 1.1.2 P. Jobez, C. Laplane, N. Timoney, I. Usmani, N. Gisin, and
M. Afzelius (Geneva, Switzerland)
Towards solid-state optical quantum memories with long storage times
- 14.25-14.45 1.1.3 E. Saglamyurek, N. Sinclair, J.A. Slater, K. Heshami, D. Oblak, and
W. Tittel (Calgary, Alberta, Canada)
An integrated processor for photonic quantum states using a broadband light-matter interface
- 14.45-15.05 1.1.4 A. Kalachev, X. Zhang, and O. Kocharovskaya (College Station, TX,
USA and Kazan, Russia)
Optical quantum memory based on control field spatial frequency modulation
- 15.05-15.25 1.1.5 M. Gündoğan, K. Kutluer, M. Mazzerà, P.M. Ledingham, and
H. de Riedmatten (Castelldefels and Barcelona, Spain)
Spin-wave storage of light at the single photon level in a solid state memory
- 15.25-15.45 1.1.6 J. Dajczgewand, R. Ahlefeldt, J.-L. Le Gouët, A. Louchet-Chauvet,
and T. Chanelière (Orsay, France)
Large storage efficiency at optical telecom wavelengths for quantum memories
- 15.45-16.15 **Coffee break**

Seminar 1.2

Chair: M. Lukin (USA)

- 16.15-16.45 1.2.1 C. Fabre, Y. Cai, N. Treps, and J. Roslund (Paris, France)
Quantum wavelength division multiplexing: a promising route to large scale quantum information processing
- 16.45-17.15 1.2.2 G. Leuchs, R. Penjweini, L. Plimak, and M. Sondermann (Erlangen-
Nürnberg and Berlin, Germany and Ottawa, Canada)
The focusing of light
- 17.15-17.35 1.2.3 M.S. Shahriar (Evanston, IL, USA), J. Scheuer (Tel-Aviv, Israel),
J. Yablon, and M. Zhou (Evanston, IL, USA)
Quantum noise limited spectral width of a superluminal laser for gravitational wave detection
- 17.35-18.55 1.2.4 L. Qian, E.Y. Zhu, and P. Sarrafi (Toronto, Ontario, Canada)
Practical entangled photon sources
- 18.55-18.15 1.2.5 I.A. Fedorov, A.K. Fedorov, and Y.V. Kurochkin (Skolkovo, Moscow,
Russia), and A.I. Lvovsky (Calgary, Canada and Skolkovo, Moscow, Russia)
Quantum optical process tomography for the multimode case
- 18.15-18.35 1.2.6 V.S.C. Canela and H. Carmichael (Auckland, New Zealand)
Manipulation of the photon number dynamics in a micromaser

- 18.35-18.50 1.2.7 R. Akhmedzhanov, L. Gushchin, A. Litvak, D. Sobgayda, I. Zelensky (Nizhny Nvgorod, Russia), and Yu. Malakyan (Ashtarak, Armenia)
On the possibility of Toffoli gate implementation in rare-earth-ion-doped inorganic crystals

Tuesday, July 15

Seminar 1.3

Chair: P. Hemmer (USA)

- 13.30-13.55 1.3.1 S.-Y. Zhu and H. Chen (Beijing and Shanghai, China)
Spontaneous emission quenching and electromagnetically induced transparency
- 13.55-14.15 1.3.2 A.J. von Zanthier, R. Wiegner, S. Oppel, D. Bhatti (Erlangen, Germany), and G. Agarwal (Stillwater, OK, USA and Erlangen, Germany)
Dicke superradiance and Hanbury Brown and Twiss intensity interference: two sides of the same coin
- 14.15-14.40 1.3.3 B.S. Ham (Gwangju, S. Korea)
Investigation of enormously enhanced photon echoes under ultraslow light regime
- 14.40-15.00 1.3.4 J.-X. Zhang, H.-T. Zhou, M.-J. Guo, and S.-Y. Zhu (Taiyuan and Beijing, China)
Quantum behavior of moving photonic atoms based on electromagnetically induced transparency
- 15.00-15.25 1.3.5 S.A. Moiseev (Kazan, Russia)
Photon echo in QED cavity for quantum storage and quantum random access memory
- 15.25-15.50 1.3.6 T. Lang, M. Hoffmann (Hannover, Germany), T. Nagy (Hannover and Göttingen, Germany), T. Binhammer (Hannover and Germany), M. Kovacev, and U. Morgner (Hannover, Germany)
Nonlinear optics with ultra-broadband oscillators
- 15.50-16.15 **Coffee break**

Seminar 1.4

Chair: B. Ham (S. Korea)

- 16.15-16.40 1.4.1 P. Hemmer (College Station, TX, USA)
Magnetic resonance lithography
- 16.40-17.05 1.4.2 S.F. Yelin (Storrs, CT, and Cambridge, MA, USA), R. Rajapakse (Storrs, CT, USA), and E.Kuznetsova (Nizhny Novgorod, Russia)
Coherent atomic gas metamaterials
- 17.05-17.30 1.4.3 A. Weis (Fribourg, Switzerland), I. Fescenko (Fribourg, Switzerland and Riga, Latvia), V. Dolgovskiy, S. Colombo, and V. Lebedev (Fribourg, Switzerland)
Visualizing magnetic fields by bright and dark atoms
- 17.30-17.55 1.4.4 L.P. Chapovsky (Novosibirsk, Russia) and A.D. Wilson-Gordon (Ramat Gan, Israel)
Coherent control of enrichment and conversion of molecular spin isomers

- 17.55-18.20 1.4.5 J. Lee, S. Jung, M. Tymchenko, C. Argyropoulos, P.-Y. Chen, F. Lu (Austin, TX, USA), F. Demmerle, G.Boehm, M.-C. Amann (Garching, Germany), A. Alu, and M.A. Belkin (Austin, TX, USA)
Giant nonlinear response from plasmonic metasurfaces coupled to intersubband transitions
- 18.20-18.40 1.4.6 V.B. Loschenov and A.V. Ryabova (Moscow, Russia)
Transformation mechanisms of crystalline nanoparticle-photosensitizers when interacting with biological structures
- 18.40-19.00 1.4.7 S. Varró (Budapest and Szeged, Hungary)
Notes on the early history of the ‘stimulated emission of radiation’

Wednesday, July 16

Seminar 1.5

Chair: C. Keitel (Germany)

- 13.30-14.00 1.5.1 D. Popmintchev (Boulder, CO, USA), C. Hernández-García, J.A. Pérez-Hernández, M.-C. Chen (Salamanca, Spain), F. Dollar, C. Manusco (Boulder, CO, USA), X.-M.Tong (Tsukuba, Japan), D. Romanov, R. Levis (Philadelphia, PA, USA), B. Shim (Binghamton, NY, USA), A. Gaeta (Ithaca, NY, USA), A. Jaron-Becker, A. Becker (Boulder, CO, USA), L. Plaja (Salamanca, Spain), M.M. Murnane, H.C. Kapteyn, and T. Popmintchev (Boulder, CO, USA)
Bright high harmonic generation in the X-ray regime driven by ultraviolet – to – mid-infrared lasers
- 14.00-14.25 1.5.2 K. Balskus, Z. Zhang, R.A. McCracken, and D.T. Reid (Edinburgh, UK)
Harmonic operation of femtosecond OPO frequency combs
- 14.25-14.45 1.5.3 R. Kienberger (Garching, Germany)
Attosecond pulses for time-resolving electron dynamics in solids and on surfaces
- 14.45-15.05 1.5.4 T.R. Akhmedzhanov, V.A. Antonov, and O. Kocharovskaya (College Station, TX, USA and Nizhny Novgorod, Russia)
Quantum interference effects in IR pump - XUV probe absorption experiments
- 15.05-15.25 1.5.5 C.L. Arnold, M. Miranda, P. Rudawski, J. Guo, C.M. Heyl, E. Witting-Larsen, J. Mauritsson, A. Losquin, E. Lorek (Lund, Sweden), J. Matyschok, T. Binhammer, O. Prochnow (Garbsen, Germany), and A. L’Huillier (Lund, Sweden)
Development and perspectives of high repetition rate attosecond
- 15.25-15.45 1.5.6 source D.R. Austin, T. Witting, T. Siegel, A. Johnson, F. McGrath, P. Hawkins, P. Matía-Hernando, Z. Diveki, S.J. Weber, A. Zaïr, J.W.G. Tisch, J.P. Marangos (London, UK)
Towards measuring attosecond dynamics with HHG driven by few-cycle long wavelength fields
- 15.45-16.15 **Coffee break**

Seminar 1.6

Chair: S. Lukishova (USA)

- 16.15-16.40 1.6.1 A. Materny, M.Namboodiri, T.Z. Khan, M. Kazemi, P. Donfack (Bremen, Germany)
Femtosecond time-resolved nonlinear spectroscopy for the investigation of dynamics of nanostructures

16.40-17.05	1.6.2 <u>A. Kaldun</u> , C. Ott, A. Blättermann, P. Raith, M. Laux, K. Meyer, T. Ding, A. Fischer, J. Evers, C.H. Keitel (Heidelberg, Germany), C.H. Greene (West Lafayette, IN, USA), and T. Pfeifer (Heidelberg, Germany) <i>Understanding laser control of Fano resonances, and applications in time-dependent spectroscopy</i>
17.05-17.30	1.6.3 D. Strickland (Waterloo, Ontario, Canada) <i>Effect of Stark shifting on multi-frequency Raman generated spectra</i>
17.30-17.55	1.6.4 G. Hehl (Stuttgart, Germany), G.Yu. Nikolaeva (Moscow, Russia), S. Gomes da Costa (Stuttgart, Germany), K.A. Prokhorov (Moscow, Russia), and <u>A. Volkmer</u> (Stuttgart, Germany) <i>Hyperspectral CARS imaging of the physical microstructure in thin polymer films</i>
17.55-18.20	1.6.5 G.R. Welch (College Station, TX, USA) <i>Time-resolved surface-enhanced coherent sensing of nanoscale molecular complexes</i>
18.20-18.40	1.6.6 <u>A. Beyer</u> , L. Maisenbacher (Garching, Germany), K. Khabarova (Moscow, Russia), A. Matveev (Garching, Germany), R. Pohl (Garching, Germany), T. Udem (Garching, Germany), Theodor W. Hänsch (Garching and Munich, Germany), N. Kolachevsky (Moscow, Russia) <i>Precision spectroscopy of atomic hydrogen</i>
18.40-19.00	1.6.7 E.S. Fry (College Station, TX, USA) <i>Integrating cavity ring-down spectroscopy</i>

Thursday, July 17

Seminar 1.7

	Chair: T. Popmintchev (USA)
11.00-11.30	1.7.1 <u>C.H. Keitel</u> , S. Cavaletto, J. Gunst, Z. Harman, and A. Pálffy (Heidelberg, Germany) <i>Ions and nuclei in intense high-frequency light pulses</i>
11.30-12.00	1.7.2 V. Kimberg, C. Weninger, T. Kierspel, T. Mullins, B. Erk (Dresden and Hamburg, Germany), A. Sanchez-Gonzalez (London, UK), M. Purvis, D. Ryan, J.J. Rocca (Fort Collins, CO, USA), R. Coffee, J.D. Bozek, C. Bostedt, S.C. Monterro, A. Lindahl, M. Ilchen, A. Lutman, J. Krzywinski, T. Maxwell (Menlo Park, CA, USA), M. Agaker, C. Sathe, R. Squibb, M. Mücke, V. Zhaunerchyk, R. Feifel, J. Nordgren, and J.E. Rubensson (Uppsala, Sweden), D. Rolles, J. Küpper, O. Mücke (Hamburg, Germany), R. London (Livermore, CA, USA), and <u>N. Rohringer</u> (Dresden and Hamburg, Germany) <i>Stimulated X-ray Raman scattering with free-electron laser sources</i>
12.00-12.30	1.7.3 <u>Ph. Zeitoun</u> , S. Daboussi, H. Dacassa (Paris, France), M. Fajardo (Lisbon, Portugal), J. Gautier, G. Lambert (Paris, France), T.T.T. Le (Orsay, France), L. Li (Paris, France and Lanzhou, China), B. Mahieu (Paris, France), G. Maynard, E. Oliva, D. Ros (Orsay, France), S. Sebban (Paris, France), P. Velarde (Madrid, Spain), Y. Wang, S. Wang, L. Yin (Fort Collins, Colorado), B. Hu (Lanzhou, China) and J.J. Rocca (Fort Collins, Colorado) <i>From high harmonic generation to X-ray chirped pulse amplification</i>
12.30-14.00	Lunch

Seminar 1.8

- Chair:** G. Welch (USA)
- 14.00-14.30 1.8.1 K. Hakuta (Tokyo, Japan)
Cavity QED on an optical nanofiber
- 14.30-14.55 1.8.2 M.I. Stockman (Atlanta, GA, USA)
Quantum nanoplasmonics and spaser
- 14.55-15.20 1.8.3 S.G. Lukishova, D. Mihaylova, and A. Liapis (Rochester, NY, USA), J.M. Winkler (Rochester, NY, USA), L.J. Bissell (Rochester, NY, USA, and Wright-Patterson, OH, USA), D. Goldberg and V.M. Menon (Flushing, NY, USA), Z. Shi (Rochester, NY, USA, and Tampa, FL, USA), R.W. Boyd (Rochester, NY, USA, and Ottawa, Canada), G. Chen and P. Prasad (Buffalo, NY, USA)
Nanocrystals in photonic bandgap microcavities and plasmonic nanoantennas for single-photon source applications
- 15.20-15.45 1.8.4 Yu.E. Lozovik (Troitsk, Moscow, Russia)
Collective excitations and phases in topological insulators and graphene structures
- 15.45-16.10 1.8.5 T. Higuchi, S. Thomas, M. Kruger, M. Forster, and P. Hommelhoff (Erlangen, Germany)
Tailoring optical near fields for achieving laser-field-driven electronic devices
- 16.10-16.30 1.8.6 V.I. Yukalov, V.K. Henner, P.V. Kharebov, and E.P. Yukalova (Dubna and Perm, Russia)
Spin superradiance by magnetic nanomolecules and nanoclusters
- 16.30-17.00 **Coffee break**

Seminar 1.9

- Chair:** N. Rohringer (Germany)
- 17.00-17.25 1.9.1 S. Shwartz (Ramat Gan, Israel and Stanford, CA, USA), M. Fuchs (Menlo Park, CA, USA and Lincoln, NE, USA), J.B. Hastings (Menlo Park, CA, USA), Y. Inubushi, T. Ishikawa, T. Katayama (Hyogo, Japan), D.A. Reis (Menlo Park, CA, USA), T. Sato, K. Tono, M. Yabashi (Hyogo, Japan), S. Yudovich (Ramat Gan, Israel), S. E. Harris (Stanford, CA, USA)
X-Ray second harmonic generation
- 17.25-17.50 1.9.2 R. Röhlberger (Hamburg, Germany)
Cooperative effects in resonant emission from extended samples
- 17.50-18.15 1.9.3 K.P. Heeg (Heidelberg, Germany), R. Röhlsberger (Hamburg, Germany), and J. Evers (Heidelberg, Germany)
Group velocity control for x-ray photons
- 18.15-18.35 1.9.4 A. Palfi, W.-T. Liao, and C.H. Keitel (Heidelberg, Germany)
Controlling single x-ray photons via coherence effects in nuclear ensembles
- 18.35-18.55 1.9.5 F. Vagizov (College Station, TX, USA and Kazan, Russia), X. Zhang, (College Station, TX, USA), W.-T. Liao (Heidelberg, Germany), R. Shakhmuratov (Kazan, Russia), A. Kalachev (College Station, TX, USA and Kazan, Russia) V. Antonov, Y. Radeonychev (College Station, TX, USA and Nizhny Novgorod, Russia), and O. Kocharovskaya (College Station, TX, USA)
Gamma-photons – nuclear ensembles interfaces
- 18.55-19.15 1.9.6 G.A. Koganov and R. Shuker (Beer Sheva, Israel)
High frequency transient lasing without inversion in a V – system

19.15-19.35 1.9.7 T. Walther, B. Rein, M. Sturm, and R. Walser (Darmstadt, Germany)
Towards lasing without inversion in neutral mercury vapors

Friday, July 18

Seminar 1.10

Chair: Ph. Zeitoun (France)

09.00-09.30 1.10.1 M.I. Stockman and V. Apalkov (Munich, Germany and Atlanta, GA, USA)
Solids in ultrafast and strong optical fields: new phenomena

09.30-09.55 1.10.2 C. Spielmann (Jena, Germany)
Novel concepts for amplification of laser pulses with extreme parameters

09.55-10.15 1.10.3 C.P. Schulz, A. Anderson, S. Birkner, F. Furch, and M.J.J. Vrakking
 (Berlin, Germany)

*Strong field ionization with few cycle laser pulses at high repetition rates:
 Coincident three-dimensional momentum analysis*

10.15-10.35 1.10.4 C.M. Yeung, B. Dromey, S. Cousens, M. Coughlan, T. Dzelzainis,
 S. Rykovanov, J. Bin, W. Ma, C. Kreuzer, D. Kiefer, J. Schreiber, J. Meyer-
 ter-Vehn, P. Foster, M. Streeter, C. Rödel, J. Bierbach, S. Kuschel, E. Eckner,
 G. Paulus, and M. Zepf (Jena, Germany; Belfast and London, UK)

*Polarization gating of high harmonic generation from relativistically driven
 plasma surfaces*

10.35-11.00 **Coffee break**

Seminar 1.11

Chair: C. Spielmann (Germany)

11.00-11.25 1.11.1 G. Cirmi, O.D. Mücke, G.M. Rossi, Sh. Fang, and Sh.-H. Chia
 (Hamburg, Germany), C. Manzoni, P. Farinello, and G. Cerullo (Milan, Italy),
 and F.X. Kärtner (Hamburg, Germany and Cambridge, Massachusetts, USA)
High-energy sub-optical-cycle parametric synthesizer

11.25-11.50 1.11.2 F. Calegari (Milano, Italy), D. Ayuso and A. Palacios (Madrid,
 Spain), A. Trabattori and S. Anumula (Belfast, UK), L. Belshaw,
 S. De Camillis, and J. Greenwood (Milano, Italy), F. Frassetto and
 L. Poletto (Padova, Italy), P. Decleva (Trieste, Italy), F. Martín (Madrid,
 Spain), M. Nisoli (Milano, Italy, and Belfast, UK)

Sub-3-fs electron dynamics in an amino acid initiated by attosecond pulses

11.50-12.10 1.11.3 A.V. Mitrofanov (Skolkovo, Moscow, and Shatura, Russia), A.A. Voronin,
D.A. Sidorov-Biryukov (Skolkovo and Moscow, Russia), G. Andriukaitis,
 T. Flöry, A. Pugžlys (Vienna, Austria), A.B. Fedotov (Skolkovo and Moscow,
 Russia), J.M. Mikhailova (Princeton, NJ, USA), V.Ya. Panchenko (Shatura,
 Moscow Region, Russia), A. Baltuška (Vienna, Austria) and A.M. Zheltikov
 (Skolkovo and Moscow, Russia; College Station, TX, USA)

Post-filament self-trapping of ultrashort laser pulses

12.10-12.30 1.11.4 Sh. Ruschin (Tel-Aviv, Israel, and Jerusalem, Israel), Y. Yashuvaev,
 and E. Shekel (Jerusalem, Israel)

Coherent combination of laser beams: beam quality assessment and measurements

12.30-14.00 **Lunch**

Seminar 1.12

- Chair:** Yu. Lozovik (Russia)
- 14.00-14.25 1.12.1 P. Pillet (Orsay, France)
Three-body Förster resonances in frozen Rydberg gases
- 14.25-14.50 1.12.2 L. Deng, E.W. Hagley, R.Q. Wang and C.W. Clark (Gaithersburg, Maryland, USA)
Light wave mixing and scattering in quantum gases
- 14.50-15.10 1.12.3 A.V. Akimov, D.D. Sukachev, E.S. Kalganova, S.A. Federov, G.A. Vishnyakova, S.A. Snigirev, A.I. Horoshilov, I.S. Kozhokary, Y.A. Danchenko, D.O. Tregubov, S.V. Pyatechenkov, N.N. Kolachevsky, and V.N. Sorokin (Moscow, Russia)
Laser cooling of Thulium atom
- 15.10-15.30 1.12.4 L. Deng and T. Nakajima (Kyoto, Japan)
Influence of hyperfine structure on the detuning-induced stimulated Raman adiabatic passage
- 15.30-15.50 1.12.5 R. Menchon-Enrich (Bellaterra, Spain), S. McEndoo (Edinburgh, UK), T. Busch (Okinawa, Japan), J. Mompert, and V. Ahufinger (Bellaterra, Spain)
Spatial adiabatic passage in two dimensional systems
- 15.50-16.15 **Coffee break**

Seminar 1.13

- Chair:** T. Nakajima (Japan)
- 16.15-16.45 1.13.1 Y.J. Ding (Bethlehem, PA, USA)
Investigation of multiple coupled optical parametric oscillators: novel configurations and applications
- 16.45-17.10 1.13.2 K. Dolgaleva (Ottawa, Ontario, Canada)
Unusual manifestation of the local-field effects in nonlinear optics
- 17.10-17.30 1.13.3 A.M. Wojciechowski, K. Sycz, A. Stabrawa, M. Piotrowski, J. Zachorowski, and W. Gawlik (Kraków, Poland)
Nonlinear magneto-optical effects and rf magnetic field detection in cold rubidium atoms processes
- 17.30-17.50 1.13.4 A.A. Zadernovsky (Moscow, Russia)
Photon-phonon laser on crystalline silicon: a feasibility study
- 17.50-17.55 O. Kocharovskaya (USA)
Closing remarks

Poster Session, July 15, 19:45-21:00

- Chair:** S. Lukishova (USA)
- P1.1 C. Marinelli, E. Mariotti, L. Marmugi, L. Moi, S. Agustsson (Siena, Italy), S. Gozzini, S. Gateva, A. Krasteva, S. Cartaleva (Sofia, Bulgaria), K. Nasyrov (Novosibirsk, Russia)
Dynamics of optical pumping process in coated cell filled with Rb vapor
- P1.2 R. Zeipl (Prague, Czech Republic), M. Jelínek (Prague and Kladno, Czech Republic), M. Vlček (Prague, Czech Republic), T. Kocourek (Prague and Kladno, Czech Republic), J. Vaniš (Prague, Czech Republic)
Characterization of laser prepared Bi₂Te₃ nano-layers

- P1.3 P. Písařík, M. Jelinek, T. Kocourek, J. Remsa (Kladno and Prague, Czech Republic), J. Zemek, J. Lukeš, and J. Šepitka (Prague, Czech Republic)
Influence of diamond and graphite bonds on mechanical properties of DLC thin films
- P1.4 D. Braunstein, G.A. Koganov, and R. Shuker (Beer Sheva, Israel)
Transient gain without inversion in a ladder system driven by a narrow pump pulse
- P1.5 A. Krasteva, D. Slavov (Sofia, Bulgaria), A. Sargsyan, D. Sarkisyan, Yu. Malakyan (Ashtarak, Armenia), A.D. Wilson-Gordon (Ramat Gan, Israel) and S. Cartaleva (Sofia, Bulgaria)
Two-photon resonance on the D_2 line of Cs enhanced by optical pumping
- P1.6 Yu.V. Zavgorodnev, K.A. Prokhorov, G.Yu. Nikolaeva, E.A. Sagitova, P.P. Pashinin, S.N. Chvalun, (Moscow, Russia), and S.A. Gordeyev (Edinburgh, Scotland)
Raman study of uniaxial deformation of single-crystal mats of ultrahigh molecular weight linear polyethylene
- P1.7 D.A. Aleksandrova, K.A. Prokhorov, E.A. Sagitova, G.Yu. Nikolaeva, P.P. Pashinin, M.A. Guseva, V.A. Gerasin (Moscow, Russia), P. Donfack and A. Materny (Bremen, Germany)
Temperature-dependent Raman spectra of polyethylene/clay nanocomposites in the region 2700-3200 cm^{-1}
- P1.8 L. Stoyanov, I. Stefanov, A. Dreischuh (Sofia, Bulgaria), S. Topuzoski and L. Janicijevic (Skopje, Republic of Macedonia)
Fraunhofer diffraction of an optical vortex beam by fork-shaped grating
- P1.9 S. Tsvetkov, M. Taslakov and S. Gateva (Sofia, Bulgaria)
Dynamics of light-induced atomic desorption at homogeneous illumination

Seminar 2

Strong-field and attosecond physics

Monday, July 14

Seminar 2.1

- Chair:** G.G. Paulus (Germany)
- 13.30-13.55 2.1.1 D. Bauer, S. Skruszewicz, M. Adel-Almajid, M. Arbeiter, T. Fennel, and J. Tiggesbäumker (Rostock, Germany)
Rescattering in $\omega/2\omega$ pulses: the phase of the phase
- 13.55-14.20 2.1.2 A. Kamor (Atlanta, USA; Marseille, France), C. Chandre (Marseille, France), T. Uzer (Atlanta, USA), and F. Mauger (Sherbrooke, Canada)
Recollision scenario without tunneling: Role of the ionic core potential
- 14.20-14.45 2.1.3 W. Becker (Berlin, Germany), S.P. Goreslavski (Moscow, Russia), D.B. Milošević (Berlin, Germany; Sarajevo, Bosnia and Hercegovina), and G.G. Paulus (Jena, Germany)
Low-energy electron rescattering in laser-induced ionization
- 14.45-15.10 2.1.4 T. Morishita (Tokyo, Japan)
Atomic and molecular tunneling ionization in a static electric field: From tunneling to over-the-barrier regimes
- 15.10-15.35 2.1.5 Q.Z. Xia, D.F. Ye, L.B. Fu, X.Y. Han, and J. Liu (Beijing, China)
Momentum distribution of near-zero-energy photoelectrons in the strong-field tunneling ionization in the long wavelength limit
- 15.45-16.15 **Coffee break**

Seminar 2.2

- Chair:** H.R. Reiss (USA, Germany)
- 16.15-16.40 2.2.1 K. Krajewska and J.Z. Kamiński (Warszawa, Poland)
Human face of quantum electron: nonlinear Compton vs. Thomson processes
- 16.40-17.05 2.2.2 M. Boca, C. Stoica, A. Dumitriu, and V. Florescu (Magurele, Romania)
Photon polarization effects in nonlinear Compton scattering
- 17.05-17.30 2.2.3 A. Di Piazza (Heidelberg, Germany)
Electron dynamics controlled via self-interaction
- 17.30-17.55 2.2.4 K.Z. Hatsagortsyan, M. Klaiber, E. Yakaboylu (Heidelberg, Germany), C. Müller (Düsseldorf, Germany), H. Bauke (Heidelberg, Germany), and G.G. Paulus (Jena, Germany)
Spin flip in ionization of highly charged ions
- 17.55-18.20 2.2.5 M.M. Dellweg and C. Müller (Düsseldorf, Germany)
Kapitza-Dirac diffraction in a two-color laser field
- 18.20-18.45 2.2.6 A.A. Silaev and N.V. Vvedenskii (Nizhny Novgorod, Russia)
Wavelength dependence of residual current density excited during gas ionization by few-cycle laser pulses

Tuesday, July 15

Seminar 2.3

Chair: D. Bauer (Germany)

- 13.30-13.55 2.3.1 M. Kübel (Garching, Germany), K.J. Betsh, N.G. Kling (Garching, Germany; Manhattan, KS, USA), A.S. Alnaser (Garching, Germany; Shariah, UAE; Riyadh, Saudi Arabia), J. Schmidt (Garching, Germany), U. Kleineberg (Garching, Germany), Y. Deng (Berlin, Germany), I. Ben-Itzhak (Manhattan, KS, USA), G.G. Paulus (Jena, Germany), T. Pfeifer (Heidelberg, Germany), J. Ullrich (Heidelberg, Germany; Braunschweig, Germany), R. Moshhammer (Heidelberg, Germany), M.F. Kling (Garching, Germany; Manhattan, KS USA), and B. Bergues (Garching, Germany)
Single-cycle non-sequential double ionization: present understanding and open questions
- 13.55-14.20 2.3.2 D.-F. Ye and J. Liu (Beijing, P.R. China)
Energy spectrum of nonsequential double ionization close to recollision threshold
- 14.20-14.45 2.3.3 V.B. Gildenburg, I.A. Pavlichenko, and A.I. Simatov (Nizhny Novgorod, Russia)
Steady-state modification of the electron density in the ultrashort laser pulse
- 14.45-15.10 2.3.4 A.V. Bogatskaya, A.M. Popov, I.V. Smetanin, E.A. Volkova (Moscow, Russia)
Propagation and amplification of the short radio-frequency pulses in a plasma channel created in gaseous media by the intense laser radiation
- 15.10-15.35 2.3.5 X.Y. Lai (Wuhan, China), C.F. de M. Faria (London, UK), C. Poli, H. Schomerus (Lancaster, UK), and X.J. Liu (Wuhan, China)
Quantum interference in strong field atomic ionization: Coulomb effect beyond strong field approximation
- 15.45-16.15 **Coffee break**

Seminar 2.4

Chair: W. Becker (Germany)

- 16.15-16.40 2.4.1 C.H. Keitel, S. Ahrens, H. Bauke, M. Klaiber, and K.Z. Hatsagortsyan (Heidelberg, Germany)
Relativistic quantum dynamics in very intense laser pulses
- 16.40-17.05 2.4.2 H.R. Reiss (Berlin, Germany; Washington, DC, USA)
Low frequency limit of laser fields
- 17.05-17.30 2.4.3 H. Zimmermann, S. Eilzer, and U. Eichmann (Berlin, Germany)
Strong-field excitation of neutral helium
- 17.30-17.55 2.4.4 Ch. McDonald, G. Orlando, and T. Brabec (Ottawa, Canada)
Tunneling time, what does it mean?
- 17.55-18.20 2.4.5 C.L. Wang (Wuhan, China; Beijing, China), X.Y. Lai (Wuhan, China), Y.J. Chen, R.P. Sun (Wuhan, China; Beijing, China), W. Quan, X.J. Liu (Wuhan, China), X.L. Hao, J. Chen (Beijing, China), and W. Becker (Berlin, Germany)
Strong field atomic ionization with elliptically polarized laser pulses
- 18.20-18.45 2.4.6 C. Zagoya, J. Wu (London, UK), M. Ronto, D. Shalashilin (Leeds, UK), and C.F. de M. Faria (London, UK)
Strong-field dynamics in phase space using initial-value representations

- 18.45-19.10 2.4.7 A.V. Gets and V.P Krainov. (Dolgoprudny, Russia)
Ramsauer effect at the scattering of electrons on rare gas clusters irradiated by intense laser pulses

Wednesday, July 16

Seminar 2.5

Chair: C.F.M. Faria (UK)

- 13.30-13.55 2.5.1 M.F. Kling (Garching, Germany)
Nanoparticles in ultrashort and intense laser fields
- 13.55-14.20 2.5.2 T. Higuchi and P. Hommelhoff (Erlangen, Germany)
A nanoscale vacuum-tube diode triggered by few-cycle laser pulses
- 14.20-14.45 2.5.3 V.A. Astapenko and S.Yu. Svita (Dolgoprudnyi, Russia)
Absorption of ultrashort electromagnetic pulses on metallic nanospheres in dielectric medium
- 14.45-15.10 2.5.4 Y. Prior (Rehovot, Israel), A. Salomon (Rehovot, Israel; Ramat Gan, Israel), M. Fedoruk, J. Feldmann (München, Germany), R. Kolkowski (Cachan, France; Wroclaw, Poland), and J. Zyss (Cachan, France)
Nonlinear optical response and long range coupling of metallic nanocavities
- 15.10-15.35 2.5.5 N.V. Vvedenskii, V.A. Kostin, I.D. Laryushin, and A.A. Silaev (Nizhny Novgorod, Russia)
Ionization-induced generation of tunable few-cycle mid-infrared pulses
- 15.45-16.15 **Coffee break**

Seminar 2.6

Chair: X.J. Liu (China)

- 16.15-16.40 2.6.1 P. Wustelt, M. Möller, A.M. Sayler, and G.G. Paulus (Jena, Germany)
The atto clock applied to highly charged ions
- 16.40-17.05 2.6.2 Z. Diveki, E.R. Simpson, S.E.E. Hutchinson, T. Siegel, A. Sanches-Gonzales, L. Miseikis, D.R. Austin, and J.P. Marangos (London, UK)
Novel attosecond beamline for investigating ultrafast electron dynamics in laser dressed environment
- 17.05-17.30 2.6.3 J. Hengster (Hamburg, Germany), W.A. Okell, D. Fabris, M. Rahmani, Y. Sonnefraud, D. Walke (London UK), D.Y. Lei (Hong Kong, China), S.A. Maier, T. Witting, C.A. Arrell (London UK), A. Seiler, S. Ibrahimkutty (Karlsruhe, Germany), M. Barthelmeß (Hamburg, Germany), S. Stankov (Karlsruhe, Germany), Th. Uphues (Hamburg, Germany), J.P. Marangos, and J.W.G. Tisch (London UK)
Attosecond streaking on metallic films
- 17.30-17.55 2.6.4 S. Varró (Budapest, Hungary; Szeged, Hungary)
A quantum treatment of generation of attosecond light pulses on the basis of von Neumann lattice coherent states
- 17.55-18.20 2.6.5 D.E. Kim (Pohang, South Korea)
Research activities at Center for Attosecond Science and Technology (CASTECH) & Max Planck Center for Attosecond Science
- 18.20-18.45 2.6.6 B. Liu, J. Liu, X.Yan, and X. He (Beijing, China)
Electron resonance acceleration and brilliant gamma-ray radiation

Thursday, July 17

Seminar 2.7

Chair: M.V. Frolov (Russia)

- 11.15-11.40 2.7.1 A.M. Popov, O.V. Tikhonova, and E.A. Volkova (Moscow, Russia)
Interference stabilization and population trapping of excited atoms in strong chirped laser pulses
- 11.40-12.05 2.7.2 M.Yu. Emelin, L.A. Smirnov, and M.Yu. Ryabikin (Nizhny Novgorod, Russia)
Atomic photoionization and dynamical stabilization with relativistically intense high-frequency light: pulse-shape effects
- 12.05-12.30 2.7.3 P. Lassonde, M. Boivin (Varennnes, Canada), L. Arissian (Albuquerque, NM USA), B.E. Schmidt (Varennnes, Canada; Montreal, Canada), and F. Légaré (Varennnes, Canada)
High gain frequency domain optical parametric amplifier
- 12.05-12.30 2.7.4 Ch. McDonald, G. Vampa, G. Orlando, P. Corkum, and T. Brabec (Ottawa, Canada)
Theory of high harmonic generation in solids
- 12.30-14.00 **Lunch**

Seminar 2.8

Chair: A.M. Popov (Russia)

- 14.00-14.25 2.8.1 D.E. Laban, J.B.O. Wood, I.V. Litvinyuk, R.T. Sang, and D. Kielpinski (Brisbane, Queensland, Australia)
Observing micro-radian phase shifts in HHG using the Gouy phase interferometer technique
- 14.25-14.50 2.8.2 V. Strelkov, M. Khokhlova, and N. Shubin, (Moscow, Russia)
High harmonic generation and Fano resonances
- 14.50-15.15 2.8.3 F.C. Velez (Warszawa, Poland; Boulder, CO USA) and A. Jaron-Becker (Boulder, CO USA)
High harmonic generation from different isomers of C₂₀ molecule
- 15.15-15.40 2.8.4 A.S. Emelina, M.Yu. Emelin, and M.Yu. Ryabikin (Nizhny Novgorod, Russia)
Magnetic-drift limited high-order harmonic generation in neutral and ionized gases with mid-IR lasers
- 15.40-16.05 2.8.5 M. Khokhlova (Moscow, Russia), A. Gonoskov, I. Gonoskov, M. Ryabikin (N. Novgorod, Russia) and V. Strelkov (Moscow, Russia)
High harmonic generation by atoms in elliptically polarized laser field
- 16.15-16.45 **Coffee break**

Seminar 2.9

Chair: V. Strelkov

- 16.45-17.10 2.9.1 S.B. Zhang (Dresden, Germany; Hamburg, Germany), D. Baykusheva (Zurich, Switzerland), P.M. Kraus, H.J. Wörner (Zurich, Switzerland), and N. Rohringer (Dresden, Germany; Hamburg, Germany)
Theory of cross-channel high-harmonic spectroscopy to study electronic-rotational wave packets in molecules

- 17.10-17.35 2.9.2 A. Rudenko, Y. Malakar, and W.L. Pearson (Manhattan, KS USA)
Intermediate states and structural rearrangement dynamics in strong-field fragmentation of molecules
- 17.35-18.00 2.9.3 S. Larimian, S. Erattupuzha, R. Maurer, S. Roither, M. Schöffler, D. Kartashov, A. Baltuška, M. Kitzler, and X. Xie (Vienna, Austria)
Ultralow fragmentation of hydrocarbons after field ionization
- 18.00-18.25 2.9.4 M.G. Pullen, B. Wolter, M. Baudisch, M. Hemmer (Barcelona, Spain), A. Senftleben, C.D. Schroeter, R. Moshhammer (Heidelberg, Germany), J. Ullrich (Heidelberg, Germany; Braunschweig, Germany), A.T. Le, C.-D. Lin (Manhattan, KS USA), and J. Biegert (Barcelona, Spain; Manhattan, KS USA)
Atomic-scale imaging of aligned poly-atomic molecules with laser-induced electron diffraction
- 18.25-18.50 2.9.5 E. Hasović (Sarajevo, Bosnia and Herzegovina), D.B. Milošević (Sarajevo, Bosnia and Herzegovina; Berlin, Germany), and M. Busuladžić (Sarajevo, Bosnia and Herzegovina)
Molecular above-threshold ionization spectra as an evidence of the three-point interference of electron wave packets
- 18.20-18.45 2.9.6 M.V. Frolov, S.S. Marmo, N.L. Manakov, A.N. Zheltukhin (Voronezh, Russia), M.Yu. Ivanov (Voronezh, Russia; Berlin, Germany), and A.F. Starace (Lincoln, NE USA)
Low-frequency approximation for molecular processes in a strong laser field

Friday, July 18

Seminar 2.10

Chair: M. Kling (Germany)

- 9.00-9.25 2.10.1 S. Erattupuzha, S. Larimian, R. Maurer, A. Baltuška, M. Kitzler, and X. Xie (Vienna, Austria)
Laser-induced polarization effect in hexane fragmentation
- 9.25-9.50 2.10.2 B. Zeng, H. Zhang, W. Chu, J. Yao (Shanghai, China), H. Xu (Changchun, China), Y. Cheng, and Z. Xu (Shanghai, China)
Rotational coherence spectroscopy based on air-laser
- 9.50-10.15 2.10.3 V.Yu. Kharin and O.V. Tikhonova (Moscow, Russia)
Low-frequency dipole response of a diatomic heteronuclear molecule on an intense ultrashort laser pulse
- 10.15-10.40 2.10.4 A. Pálffy and H.A. Weidenmüller (Heidelberg, Germany)
Laser-nucleus reactions leading far from the valley of stability
- 10.45-11.15 **Coffee break**

Seminar 2.11

Chair: A. Rudenko (USA)

- 11.15-11.40 2.11.1 V.A. Tulskey and S.V. Popruzhenko (Moscow, Russia)
Terahertz currents induced by strong field two-color ionization
- 11.40-12.05 2.11.2 L.N. Alexandrov, M.Yu. Emelin, and M.Yu. Ryabikin (Nizhny Novgorod, Russia)
Coulomb effects in quasi-dc current generation from gases ionized by two-color laser field

- 12.05-12.30 2.11.3 K. Zhang, M. Liu, and B. Wang (Beijing China)
High-order above-threshold ionization of an atom in IR+XUV two-color laser fields
- 12.30-12.55 2.11.4 M. Li, J. Geng, H. Liu, Y. Deng, C. Wu, L.-Y. Peng, Q. Gong, and Y. Liu (Beijing, China)
Classical-quantum correspondence for above threshold ionization

Poster Session, July 15, 19:45-21:00

- Chair:** M.V. Fedorov (Russia)
- P2.1 A. Gazibegović-Busuladžić, E. Hasović, A. Čerkić (Sarajevo, Bosnia and Herzegovina), W. Becker (Berlin, Germany), D.B. Milošević (Sarajevo, Bosnia and Herzegovina; Berlin, Germany), and M. Busuladžić (Sarajevo, Bosnia and Herzegovina)
Atomic and molecular processes generated by few-cycle laser pulses
- P2.2 A. Dakova, L.M. Kovachev, and K.L. Kovachev (Sofia, Bulgaria)
 $\lambda^{(3)}$ diffraction of phase-modulated broad-band femtosecond pulses
- P2.3 A.S. Emelina, M.Yu. Emelin, and M.Yu. Ryabikin (Nizhny Novgorod, Russia)
Generation of high harmonics with energies beyond 10 keV in neutral gases irradiated by mid-infrared laser pulses
- P2.4 K. Krajewska and J.Z. Kamiński (Warszawa, Poland)
Circular dichroism in nonlinear electron-positron pair creation
- P2.5 M.V. Frolov, D.V. Knyazeva, N.L. Manakov (Voronezh, Russia), and A.F. Starace (Lincoln, NE USA)
Chasm-like structures in ATI spectra for a two-color laser field: suppression of single-return trajectories
- P2.6 T. Moritaka and H. Takabe (Osaka, Japan)
Effects of pulse structure on gamma ray emission and pair production in high-intensity laser fields
- P2.7 A.H. Gevorgyan, K.B. Oganesyan (Yerevan, Armenia), and G.A.Vardanyan (Granada Hills, CA USA)
The photonic density of states of the stack of cholesteric liquid crystal and anisotropic medium layers
- P2.8 K.B. Oganesyan, N.Sh. Izmailyan (Yerevan, Armenia), A.E. Ayryan, and A.S. Ayryan (Dubna, Russia)
Diamond synthesis using electron beams
- P2.9 T.S. Sarantseva, M.V. Frolov, N.L. Manakov (Voronezh, Russia), and A.F. Starace (Lincoln, NE USA)
Caustics in two-color laser field with orthogonal polarizations
- P2.10 A.A. Silaev and N.V. Vvedenskii (Nizhny Novgorod, Russia)
Effective absorbing layers in numerical solutions of the time-dependent Schrödinger equation
- P2.11 V. Usachenko, V. Kim, and P. Pyak (Tashkent, Uzbekistan)
Signatures of field-induced intramolecular quantum interference in high-order harmonic generation by laser-irradiated homonuclear diatomic(s)
- P2.12 S. Varró (Szeged, Hungary; Budapest, Hungary), N. Kroó (Budapest, Hungary) and P. Rácz (Szeged, Hungary; Budapest, Hungary)
Surface-plasmon-induced effective attraction between electrons
- P2.13 A.N. Zheltukhin, A.V. Flegel, M.V. Frolov, N.L. Manakov (Voronezh, Russia), and A.F. Starace (Lincoln, NE USA)
Resonant electron-atom bremsstrahlung in an intense laser field

Seminar 3 Biophotonics

Monday, July 14

Seminar 3.1

- Chair:** E. Borisova (Bulgaria)
- 13.30-13.55 3.1.1 J. Lademann, A. Patzelt, H. Richter (Berlin, Germany), O. Lademann (Rostock, Germany), M.E. Darvin, M.E. Meinke (Berlin, Germany), A. Kramer (Greifswald, Germany), and B. Lange-Asschenfeldt (Klagenfurt am Woerthersee, Austria)
Application of laser scanning microscopy for the evaluation of effects of tissue-tolerable plasma in Dermatology
- 13.55-14.20 3.1.2 M. Jelinek, T. Kocourek, P. Písařík, J. Remsa, J. Zemek, and L. Bačáková (Prague, Czech Republic)
Chromium- doped biomaterials prepared by laser
- 14.20-14.45 3.1.3 L. Avramov, I. Iliev, Ch. Markovska, and I. Kacarska (Sofia, Bulgaria)
Study of chlorine photosensitizers assisted photodynamic effect in vitro
- 14.45-15.05 3.1.4 F. Lu, M. Jin, and M.A. Belkin (Austin, Texas, USA)
Mid-infrared nanospectroscopy by detecting molecular expansion forces
- 15.05-15.25 3.1.5 P. Pavlova (Plovdiv, Bulgaria), E. Borisova, El. Pavlova, and L. Avramov (Sofia, Bulgaria)
Adaptive technique for matching the spectral response in skin lesions' images
- 15.25-15.45 3.1.6 A.A. Krasnovsky (Moscow, Russia)
Laser applications to studies of singlet oxygen photonics
- 15.45-16.15 **Coffee break**

Seminar 3.2

- Chair:** J. Lademann (Germany)
- 16.15-16.35 3.2.1 E. Borisova, E. Pavlova, P. Troyanova, B. Vladimirov, R. Ivanova, and L. Avramov (Sofia, Bulgaria)
Light-induced fluorescence spectroscopy of cutaneous and mucosal tumors – clinical applications
- 16.35-16.55 3.2.2 V.S. Maryakhina and L.S. Scheglova (Orenburg, Russia)
Laser flash photolysis in investigation of breast cancer at different stages of pathology development
- 16.55-17.15 3.2.3 V.B. Loschenov, T.A. Savelieva, P.V. Grachev, M.V. Loshchenov, S.A. Goryanov, P.V. Zelenkov, and A.A. Potapov (Moscow, Russia)
Multimodal spectroscopy technique for optical biopsy in vivo during neurosurgery
- 17.15-17.35 3.2.4 I. Angelov, N. Markova, I. Eneva, V. Mantareva, E. Borisova, and V. Enchev (Sofia, Bulgaria)
Tautomer compound with capabilities for application in fluorescent investigation of biomolecules
- 17.35-17.55 3.2.5 T.Yu. Moguilnaya, P.V Bobkov, V.A. Tomilin, and E.B. Kononenko (Moscow, Russia)
Real-time monitoring of changes the pathogens concentration in under influence of nanosilver particles by resonance laser spectroscopy techniques

- 17.55-18.15 3.2.6 H. Pazokian, A.H. Panah, M. Mollabashi, and J. Barzin (Tehran, Iran)
XeCl laser treatment of polyethersulfone membrane: comparison of the results in air and water
- 18.15-18.35 3.2.7 Yu.I. Salamin, B.I. Galow, J-X. Li, Z. Harman, and Ch.H. Keitel (Heidelberg, Germany)
Charged-particle acceleration for tumor therapy

Poster Session, July 15, 19:45-21:00

- Chairs:** L. Avramov (Bulgaria) and S.V. Kireev (Russia)
- P3.1 N.A. Aksanova, V.V. Kardumjan, S.Z. Rogovina, N.N. Glagolev, and A.B. Solovieva (Moscow, Russia)
Photosensitizing activity of systems chitosan-amphiphilic polymers-porphyrin
- P3.2 Yu.V. Alexeev, O.V. Mislavsky, and A.V. Ivanov (Moscow, Russia)
Studies on the effects of 1270 nm laser light at the binding reaction "antigen-antibody" and at the potential of staphylococcal enterotoxin a to stimulate a specific IgG response in mice
- P3.3 I.P. Angelov (Sofia, Bulgaria), T.N. Mogileva, K.G. Mikheev (Izhevsk, Russia), V.N. Mantareva (Sofia, Bulgaria), and G.M. Mikheev (Izhevsk, Russia)
Optical properties of nanoscale compounds of zinc phthalocyanine with four galactopyranosyl radicals
- P3.4 A.O. Andreev, V.N. Petrovskiy, V.D. Mironov, E.D. Protasov, N.M. Prokopova, P.S. Dzhumaev, and V.I. Polsky (Moscow, Russia)
Change of phase composition of metals by the radiation of the fiber laser for management of their magnetic characteristics
- P3.5 Ya. Andreeva, E. Borisova, Ts. Genova, Al. Zhelyazkova, and L. Avramov (Sofia, Bulgaria)
Synchronous fluorescence spectroscopy for analysis of vegetable oils
- P3.6 T.V. Baikova, S.A. Minaeva, A.V. Sundukov, T.S. Svistunova, V.N. Bagratashvili, and S.A. Gonchukov (Moscow, Russia)
Detection of single bacteria – causative agents of meningitis using Raman microscopy
- P3.7 T. Dreischuh, L. Gurdev, O. Vankov, I. Bliznakova, D. Stoyanov, and L. Avramov (Sofia, Bulgaria)
Turbid media extinction coefficient for near-infrared laser radiation
- P3.8 G.L. Danielyan, I.P. Shilov, L.Yu. Kochmarev, A.V. Ivanov, A.A. Zamjatin, A.A. Makovetskii, and V.G. Artyushenko (Moscow, Russia)
High numerical aperture silica fiber-optic probes for luminescence cancer diagnostics
- P3.9 Ts. Genova, E. Borisova, L. Angelova, Al. Zhelyazkova, M. Keremedchiev, B. Vladimirov, and L. Avramov (Sofia, Bulgaria)
Excitation-emission matrices for detection of colorectal tumours – initial investigations
- P3.10 J. Horilova, L. Haizer, D. Chorvat jr., and A. Marcek Chorvatova (Bratislava, Slovakia)
Detection of reduced nicotinamide dinucleotide (NADH) fluorescence with picosecond resolution

- P3.11 S.V. Kireev, S.L. Shnyrev, I.G. Simanivsky, and S.V. Suganev (Moscow, Russia)
Fluorescence of molecular iodine excited by radiation of copper laser (510.6 and 578.2 nm) in atmosphere
- P3.12 S.V. Kireev, S.L. Shnyrev, and I.G. Simanivsky (Moscow, Russia)
Study of iodine-127 and iodine-129 isotopes fluorescence excited by radiation of copper laser vapor laser (510.6 nm)
- P3.13 S.V. Kireev, S.L. Shnyrev, and I.G. Simanovsky (Moscow, Russia)
Laser fluorescence method of molecular iodine detecting in the visible spectral region
- P3.14 N.V. Minaev, P.S. Timashev, A.V. Koroleva (Troitsk, Russia), I.V. Mukhina, and M.V. Vedunova (Nizhni Novgorod, Russia)
Scaffolds for neural implants fabricated by two-photon polymerization
- P3.15 M.A. Murzakov, V.N. Petrovskiy, P.S. Dzhumaev, V.I. Polsky, V.D. Mironov, and N.M. Prokopova (Moscow, Russia)
Influence of additions of nanoparticles of TaC on a microstructure laser claddings
- P3.16 V.D. Rumyantseva, N.P. Ivanovskaya, N.S. Osin, and G.M. Sukhin (Moscow, Russia)
Platinum porphyrins complexes as long-lasting luminescent markets for early diagnostics of superficial tumors
- P3.17 S.L. Shnyrev, I.G. Simanovsky, and A.A. Kondashov (Moscow, Russia)
Fluorescence of molecular iodine excited by ytterbium fiber laser radiation (532 nm)
- P3.18 D.D. Sidorov-Biryukov, V.I. Timofeev, and I.P. Kuranova (Moscow, Russia)
Dynamics of interaction of thymidine phosphorylase with thymidine and azidothymidine
- P3.19 S.A. Uspenskiy, V.N. Petrovskiy, D.P. Bykovsky, V.D. Mironov, and N.M. Prokopova (Moscow, Russia)
Spectral diagnostics of a vapor-plasma plume produced during welding titanium with a high power ytterbium fiber laser
- P3.20 Al. Zhelyazkova, E. Borisova, Tz. Todorova, Ts. Genova, L. Angelova, E. Pavlova, P. Troyanova, and L. Avramov (Sofia, Bulgaria)
Polarization-sensitive autofluorescence spectroscopy of normal skin in vivo – initial experimental results

Seminar 4
Physics of Lasers and Fiber Lasers

Monday, July 23

Seminar 4.1

- Chair:** A.B. Savel'ev (Russia)
- 13.30-14.00 4.1.1 T. Ditmire, E. Gaul, M. Martinez, M. Donovan, S. Feldman, W. White, C. Frederickson, W. Grigsby, G. Dyer, A. Bernstein, A. Schill (Austin, TX, USA), J. Norby (Santa Clara, CA, USA), G. Chériaux, J.-P. Chambaret (Palaiseau, France), and B. LeGarrec (Prague, Czech Republic)
High repetition rate kJ-class nanosecond to femtosecond lasers
- 14.00-14.30 4.1.2 M. Hemmer, D. Sánchez (Barcelona, Spain), M. Jelinek (Prague, Czech Republic), H. Hoogland (Martinsried, Germany), K. Zawilski, P. Schunemann (New Hampshire, USA), R. Holzwarth (Martinsried, Germany), V. Kubeček (Prague, Czech Republic), and J. Biegert (Barcelona, Spain)
Few-cycle, 6.5 μ m OPCPA pump and front-end
- 14.30-15.00 4.1.3 L. Veisz, D. Rivas, G. Marcus, X. Gu, D. Cardenas, J. Xu, J. Mikhailova, A. Buck, T. Wittmann, C.M.S. Sears (Garching, Germany), D. Herrmann (München, Germany), O. Razskazovskaya, V. Pervak, and F. Krausz (Garching, Germany)
An optical parametric synthesizer to generate sub-two-optical-cycle pulses
- 15.00-15.30 4.1.4 M.P. Kalashnikov, L. Ehrentraut, and M. Schnuerer (Berlin, Germany)
Dual-beam super high temporal contrast Ti:Sa laser system using double CPA technique
-

Poster Session, July 15, 19:45-21:00

- Chair:** M.P. Kalashnikov (Germany)
- P4.1 D. Penninckx, J. Luce, and C. Gouédard (Cedex, France)
Precompensation of nonlinear filtering functions of frequency conversion
- P4.2 P. Ghosh and A.K. Sharma (Assam, India)
Two-photon-absorption induced lasing excited by Q-switched and continuous wave laser in diamond-shaped zinc oxide nanostructures

Seminar 5 Nonlinear Optics & Spectroscopy

Monday, July 14

Seminar 5.1

Chair: V. Makarov (Russia)

- 13.30-13.55 5.1.1 S.L. Chin (Quebec City, Canada)
Air filamentation into the quantum and classical world
- 13.55-14.20 5.1.2 A. Mysyrowicz (Palaiseau, France)
Lasing in the sky
- 14.20-14.45 5.1.3 S. Fourmaux, A. Saraf, P. Antici, S. MacLean, and J.-C. Kieffer
(Montreal, Canada)
Coherent hard X-ray imaging at INRS and applications
- 14.45-15.10 5.1.4 S. Tzortzakis (Heraklion, Greece)
Propagation effects of strong field THz beams
- 15.10-15.35 5.1.5 H. Zeng, W. Li, and M. Li (Shanghai, China)
Molecular alignment induced modulation of plasma gratings
- 15.35-16.15 **Coffee break**

Seminar 5.2

Chair: S.L. Chin (Canada)

- 16.15-16.40 5.2.1 K.S. Grigoriev, V.A. Makarov, and I.A. Perezhogin (Moscow, Russia)
Collinear interaction of two monochromatic beams with polarization singularities in isotropic medium with spatial dispersion of cubic nonlinearity
- 16.40-17.05 5.2.2 A. Couairon, V. Jukna (Palaiseau, France), J. Darginavicius, D. Majus, N. Garejev, I. Grazuleviciute, G. Valiulis, G. Tamosauskas, A. Dubietis (Vilnius, Lithuania), M. Durand, A. Jamac, A. Houard, Y. Liu, A. Mysyrowicz (Palaiseau, France), A. Lotti (Como, Italy), D. Faccio (Edinburgh, UK), M. Hemmer, M. Baudisch, A. Thai, F. Silva, D.R. Austin, and J. Biegert (Barcelona, Spain)
Near and mid-infrared pulse self-compression and light bullet formation by filamentation in transparent solids
- 17.05-17.30 5.2.3 L. Kovachev (Sofia, Bulgaria)
Ionization-free filamentation. Problems and possible solutions
- 17.30-17.55 5.2.4 V.A. Trofimov, T.M. Lysak, M.V. Fedotov, and A.S. Prokopenko (Moscow, Russia)
Self-similar shape mode of optical pulse propagation in medium with non-stationary absorption
- 17.55-18.20 5.2.5 P.M. Lushnikov and N. Vladimirova (Albuquerque, USA)
Nonlinear combining of laser beams

Tuesday, July 15

Seminar 5.3

Chair: A. Mysyrowicz (France)

- 13.30-13.55 5.3.1 A.V. Balakin, M.N. Esaulkov, N.B. Kuzechkin, I.A. Ozheredov, P.M. Solyankin, and A.P. Shkurinov (Moscow, Russia)
THz micro- and nanophotonics: linear and nonlinear optical phenomena

- 13.55-14.20 5.3.2 E. Cabrera-Granado (Madrid, Spain), Y. Chen (Lausanne, Switzerland), C. Kohler (Arpajon, France), I. Babushkin (Berlin, Germany), L. Berge (Arpajon, France), and S. Skupin (Talence, France)
THz and far-infrared radiation from ionizing multi-color pulses
- 14.20-14.45 5.3.3 M.D. Thomson, F. Meng, H.G. Roskos (Frankfurt am Main, Germany)
High-field terahertz-mid-infrared continuum pulses from two-color photoinduced gas plasmas
- 14.45-15.10 5.3.4 J. Zhao (Tianjin, China), W. Chu (Shanghai, China), L. Guo, Z. Wang, J. Yang, W. Liu (Tianjin, China), Y. Cheng, and Z. Xu (Shanghai, China)
Strong spatial confinement of THz pulse inside femtosecond laser filament in air
- 15.10-15.35 5.3.5 P. Klarskov (Kongens Lyngby, Denmark), K. Iwaszczuk, M. Zalkovskij, R. Malureanu, A. Strikwerda, T. Wang (Kongens Lyngby, Denmark), S.J. Clark (Durham, United Kingdom), J. Dai, X.-C. Zhang (Rochester, USA), and P.U. Jepsen (Kongens Lyngby, Denmark)
Nonlinear spectroscopy with intense table-top terahertz sources
- 15.35-15.50 5.3.6. O.G. Kosareva, N.A. Panov, V.A. Andreeva, D.E. Shipilo (Moscow, Russia), L. Berge (Arpajon, France), A.P. Shkurinov, V.A. Makarov (Moscow, Russia), and S.L. Chin (Quebec, Canada)
Directionality of infrared and terahertz radiation propagating from femtosecond filaments
- 15.50-16.05 5.3.7 V.A. Andreeva, N.A. Panov, O.G. Kosareva, A.P. Shkurinov, V.A. Makarov (Moscow, Russia), and S.L. Chin (Quebec City, Canada)
Frequency-angular distribution of THz emission from femtosecond filament in gases
- 16.05-16.15 **Coffee break**

Seminar 5.4

Chair: J.-C. Kieffer (Canada)

- 16.15-16.40 5.4.1 P. Polynkin (Arizona, USA)
Remote air lasing concepts
- 16.40-17.05 5.4.2 H. Xu (Changchun, China), W. Chu (Shanghai, China), H. Li (Changchun, China), J. Ni, B. Zeng, J. Yao, H. Zhang, G. Li, C. Jing, H. Xie (Shanghai, China), K. Yamanouchi (Tokyo, Japan), and Y. Cheng (Shanghai, China)
Filament-driven lasing action for sensing combustion intermediates
- 17.05-17.20 5.4.3 L.I. Pavlov and V.K. Kovachev (Blagoevograd, Bulgaria)
Spectroscopy of laser-induced autoionizing nonlinear resonances in atomic systems
- 17.20-17.35 5.4.4 T.-J. Wang, S. Yuan, J. Ju (Shanghai, China), J.-F. Daigle (QC, Canada), H. Zeng, R. Li, Z. Xu (Shanghai, China), and S.L. Chin (QC, Canada)
Femtosecond laser filament induced lasing actions in air
- 17.35-18.00 5.4.5 N. Berti, W. Ettoumi, J. Kasparian, and J.-P. Wolf (Geneva, Switzerland)
Time-reversibility of laser filamentation
- 18.00-18.25 5.4.6 W. Chu, J. Ni, B. Zeng, C. Jing, J. Yao (Shanghai, China), H. Xu (Changchun, China), Y. Cheng, and Z. Xu (Shanghai, China)
Self-induced white-light seeding laser in an air filament

- 18.25-18.50 5.4.7 S.V. Chekalin (Troitsk, Russia), A.E. Dokukina, A.E. Dormidonov, V.P. Kandidov (Moscow, Russia), V.O. Kompanets (Troitsk, Russia), and E.O. Smetanina (Moscow, Russia)
Spatiotemporal compression of femtosecond laser pulse and anti-Stokes wing of supercontinuum under filamentation at anomalous group-velocity dispersion

Wednesday, July 16

Seminar 5.5

Chair: P. Polynkin (USA)

- 13.30-13.55 5.5.1 P. Melentiev, A. Afanasiev, and V. Balykin (Troitsk, Russia)
Giant optical nonlinearity of plasmonic nanostructures
- 13.55-14.20 5.5.2 V.M. Shandarov, A.S. Perin and V.Yu. Ryabchenok (Tomsk, Russia)
Self-induced diffraction patterns in nonlinear Fabry-Perot interferometer on lithium niobate
- 14.20-14.35 5.5.3 F.V. Potemkin and E.I. Mareev (Moscow, Russia)
Dynamics of shock waves and cavitation bubbles, induced by femtosecond filament in water under supercritical power regime
- 14.35-14.50 5.5.4 D.A. Georgieva and L.M. Kovachev (Sofia, Bulgaria)
Energy transfer between two filaments due to degenerate four-photon parametric process
- 14.50-15.05 5.5.5 H. Iglev, J. C. Werhahn, M. Bradler, D. Hutzler, R. Heider, E. Riedle, and R. Kienberger (Munich, Germany)
IR pump-repump-probe spectroscopy with CEP stable few cycle pulses
- 15.05-15.20 5.5.6 F. Tommasi, E. Ignesti, L. Fini, and S. Cavalieri (Sesto Fiorentino, Italy)
Recovering the delay acquired by a light pulse in propagation
- 15.20-15.35 5.5.7 M.V. Volkov, E. Mitina, R.V. Volkov, D. Uryupina, D. Shipilo, N. Panov, O.G. Kosareva, and A.B. Savel'ev (Moscow, Russia)
Plasma influence on intrapulse four-wave mixing under femtosecond filamentation in air
- 15.35-16.15 **Coffee break**

Seminar 5.6

Chair: O. Kosareva (Russia)

- 16.15-16.30 5.6.1. G.M. Mikheev, A.S. Saushin, R.G. Zonov, and V.M. Styapshin (Izhevsk, Russia)
Photon-drag effect in nanostructured resistive films
- 16.30-16.45 5.6.2 G. Schunk, M. Förtsch, J.U. Fürst, U. Vogl, D.V. Strekalov, F. Sedlmeir, H.G.L. Schwefel, G. Leuchs, and C. Marquardt (Erlangen, Germany)
Identifying modes: frequency spectra and emission patterns of large whispering-gallery mode resonators
- 16.45-17.00 5.6.3 O.A. Morozov, A.K. Naumov, A.V. Lovchev, and A.D. Strel'nik (Kazan, Russia)
Analyze of nonlinear optical materials properties by new simple powder technique
- 17.00-17.15 5.6.4 V.B. Gildenburg, V.A. Kostin, and I.A. Pavlichenko (Nizhny Novgorod, Russia)
Collective electron resonances of fullerene C₆₀

Poster Session, July 15, 19:45-21:00

Chair: V. Andreeva (Russia)

- P5.1 L.I. Pavlov and V.K. Kovachev (Blagoevgrad, Bulgaria)
Effect of resonant ionization on the three- and four-photon optical mixing in metal vapors
- P5.2 V.K. Kovachev and L.I. Pavlov (Blagoevgrad, Bulgaria)
Laser-induced structure in the ionization continuum of inert gases
- P5.3 V. Slavchev and L. Kovachev (Sofia, Bulgaria)
Phase-modulated broad-band optical pulses and filamentation
- P5.4 K.G. Mikheev, A.S. Saushin, and G.M. Mikheev (Izhevsk, Russia)
Raman spectra of photosensitive silver-palladium resistive films

Seminar 6 Physics of Cold Trapped Atoms

Monday, July 14

Seminar 6.1

- Chairs:** V.S. Bagnato (Brazil) and S. Giorgini (Italy)
- 13.30-13.55 6.1.1 Y. Castin, Ch. Herzog, and M. Olshanii (Paris, France)
A liquid-gas transition for bosons with attractive interaction in one dimension
- 13.55-14.20 6.1.2 M. Holzmann (Paris, France)
Superfluidity and Bose condensation of disordered quasi 2D Bose gases
- 14.20-14.45 6.1.3 O.E. Alon (Tivon, Israel), J. Grond, A.I. Streltsov, A.U.J. Lode (Heidelberg, Germany), K. Sakmann (Stanford, USA), and L.S. Cederbaum (Heidelberg, Germany)
Excitation spectra of many-body systems by linear response: General theory and applications to trapped condensates
- 14.45-15.05 6.1.4 A. Sinatra, H. Kurkjian, and Y. Castin, (Paris, France)
Phase operators and blurring time of a pair-condensed Fermi gas
- 15.05-15.25 6.1.5 X. Leyronas (Paris, France)
Virial expansion with Feynman diagrams
- 15.25-15.45 6.1.6 M. Urban (Orsay, France), D. Davesne, P.-A. Pantel (Villeurbanne, France), and P. Schuck (Orsay, France)
Pair correlations in normal-fluid imbalanced Fermi gases within the T-matrix approach
- 15.45-16.15 **Coffee break**

Seminar 6.2

- Chairs:** O. Alon (Israel) and Y. Castin (France)
- 16.15-16.40 6.2.1 V.S. Bagnato, A. Cidrim, and F.E.A. dos Santos (São Carlos, Brazil)
Spontaneous turbulence generation in Bose-Einstein condensates
- 16.40-17.05 6.2.2 V.I. Yukalov, A.N. Novikov (Dubna, Russia), and V.S. Bagnato (São Carlos, Brazil)
Modelling strongly excited Bose-Einstein condensates of trapped atoms
- 17.05-17.30 6.2.3 K. Fujimoto and M. Tsubota (Osaka, Japan)
Correlation of superfluid velocity in spin-superflow turbulence for ferromagnetic spin-1 spinor Bose-Einstein condensate
- 17.30-17.55 6.2.4 G. Lamporesi, S. Donadello, S. Serafini, M. Tylutki, L.P. Pitaevskii, F. Dalfovo, and G. Ferrari (Povo, Italy)
Observation of solitonic vortices in Bose-Einstein condensates
- 17.55-18.20 6.2.5 M.C. Tsatsos and V.S. Bagnato (São Carlos, Brazil)
Vortex oscillations and vortex-to-soliton deformation in two- and three-dimensional oblate trapped atomic Bose-Einstein condensates
- 18.20-18.30 **Discussion**

Tuesday, July 15

Seminar 6.3

- Chairs:** L.E. Reichl (USA) and M. Holzmann (France)
- 13.30-13.55 6.3.1 L. Sanchez-Palencia (Palaiseau, France)
Light-cone effect and supersonic correlations in one and two-dimensional bosonic superfluids
- 13.55-14.20 6.3.2 Yu.E. Lozovik (Troitsk, Russia)
Anisotropic superfluidity, instabilities and strong correlated phases in dipole systems
- 14.20-14.45 6.3.3 R. Rivers (London, UK), D.-S. Leeb, C.-Y. Linb, and J.-T. Hsiang (Taiwan, China)
Quantum stochastic behaviour in cold Fermi gases
- 14.45-15.05 6.3.4 O. Fialko (Albany, New Zealand), B. Opanchuk (Melbourne, Australia), J. Brand (Albany, New Zealand), and P. Drummond (Melbourne, Australia)
Fate of the false vacuum: towards realization with ultra-cold atoms
- 15.05-15.25 6.3.5 A. Balaz̃ (Belgrade, Serbia), R. Paun, A.I. Nicolin (Bucharest, Romania), S. Balasubramanian, and R. Ramaswamy (Kumbakonam, India)
Faraday waves in collisionally inhomogeneous Bose-Einstein condensates
- 15.25-15.45 6.3.6 E. Witkowska, T. Swislocki, and M. Matuszewski (Warsaw, Poland)
Dynamics of a quantum phase transition in an antiferromagnetic Bose-Einstein condensate
- 15.45-16.15 **Coffee break**

Seminar 6.4

- Chairs:** Yu.E. Lozovik (Russia) and R. Rivers (UK)
- 16.15-16.40 6.4.1 L.E. Reichl and E.D. Gust (Austin, USA)
Sound mode decay in dilute Bose-Einstein condensates
- 16.40-17.05 6.4.2 B.P. van Zyl (Antigonish, Canada), E. Zaremba (Kingston, Canada), and J. Towers (Dunedin, New Zealand)
Collective excitations of a harmonically trapped, two-dimensional, spin-polarized dipolar Fermi gas in the hydrodynamic regime
- 17.05-17.30 6.4.3 R.P. Smith, I. Gotlibovych, T.F. Schmidutz, A.L. Gaunt, N. Navon, and Z. Hadzibabic (Cambridge, UK)
Observing the ground-state properties of an interacting homogeneous Bose gas
- 17.30-17.55 6.4.4 N. Navon, A.L. Gaunt, T.F. Schmidutz, I. Gotlibovych, R.P. Smith, and Z. Hadzibabic (Cambridge, UK)
Thermodynamics and dynamics of Bose condensation in a quasi-homogeneous gas
- 17.55-18.20 6.4.5 N. Sakumichi (Saitama, Japan), Y. Nishida, and M. Ueda (Tokyo, Japan)
Lee-Yang cluster expansion approach to the BCS-BEC crossover
- 18.20-18.30 **Discussion**

Wednesday, July 16

Seminar 6.5

- Chairs:** P. Hannaford (Australia) and B. Svistunov (USA)
- 13.30-13.55 6.5.1 C.A.R. Sa de Melo (Atlanta, USA)
Time-reversal-breaking and d-wave superfluidity of ultracold dipolar fermions in optical lattices?
- 13.55-14.20 6.5.2 A. Pelster (Kaiserslautern, Germany)
Tuning the quantum phase transition of Bosons in optical lattices
- 14.20-14.45 6.5.3 N. Dupuis (Paris, France) and A. Rançon (Chicago, USA)
Higgs amplitude mode in the vicinity of the superfluid-Mott-insulator transition of a two-dimensional Bose gas
- 14.45-15.10 6.5.4 M. Łacki, B. Damski, and J. Zakrzewski (Kraków, Poland)
Numerical studies of ground-state fidelity of the Bose-Hubbard model
- 15.10-15.35 6.5.5 D. Ciampini (Pisa, Italy)
Superadiabatic quantum driving of two- and three-level systems
- 15.35-15.45 **Discussion**
- 15.45-16.15 **Coffee break**

Seminar 6.6

- Chairs:** A. Pelster (Germany) and C.A.R. Sa de Melo (USA)
- 16.15-16.40 6.6.1 B. Wu, Q. Zhu (Beijing, China), and Q. Zhang (Hangzhou, China)
Extended Bose-Hubbard model with pair tunneling: spontaneous symmetry breaking, effective ground state and fragmentation
- 16.40-17.05 6.6.2 P. Hannaford, S. Jose, P. Surendran, Y. Wang, I. Herrera (Melbourne, Australia), L. Krzemien (Krakow, Poland), S. Whitlock (Heidelberg, Germany), R. McLean, and A. Sidorov (Melbourne, Australia)
Bose-Einstein condensation in a periodic magnetic lattice
- 17.05-17.30 6.6.3 A. Gallemí and M. Guilleumas (Barcelona, Spain)
Bose gases in triple-well potentials
- 17.30-17.55 6.6.4 A. Simoni, H. Terrier, and J.-M. Launay (Rennes, France)
A spectral approach for ultracold scattering and bound state calculations in infinite periodic lattices
- 17.55-18.20 6.6.5 R. Diaz-Mendez, F. Mezzacapo, G. Pupillo (Strasbourg, France), F. Cinti (Stellenbosch, South Africa), and W. Lechner (Innsbruck, Austria)
Quantum and classical glasses of ultrasoft particles in two dimensions
- 18.20-18.30 **Discussion**

Thursday, July 17

Seminar 6.7

- Chairs:** L. Sanchez-Palencia (France) and J. Tempere (Belgium)
- 11.00-11.25 6.7.1 K. Ziegler (Augsburg, Germany)
Entanglement dynamics of atomic Josephson junctions
- 11.25-11.50 6.7.2 A. Minguzzi, M. Cominotti (Grenoble, France), D. Rossini (Pisa, Italy), M. Rizzi (Mainz, Germany), and F. Hekking (Grenoble, France)
Optimal persistent currents for interacting bosons on a 1D ring with a gauge field

11.50-12.15 6.7.3 K.K. Das, M.R. Meehan, and A.J. Pyle (Kutztown, USA)
A quantum paddlewheel

12.15-12.30 **Discussion**

12.30-14.00 **Lunch**

Seminar 6.8

Chairs: K.K. Das (USA) and K. Ziegler (Germany)

14.00-14.25 6.8.1 S. Giorgini and N. Matveeva (Povo, Italy)

Quantum Monte-Carlo study of dipolar fermions in single and bilayer configurations

14.25-14.50 6.8.2 J. Tempere, S.N. Klimfin, and J.T. Devreese (Antwerpen, Belgium)

Effective field theory for vortices and dark solitons in ultracold Fermi gases

14.50-15.15 6.8.3 J. Brand and A.M. Mateo (Auckland, New Zealand)

Complex solitary waves in constricted superfluids

15.15-15.40 6.8.4 M. Brewczyk (Białystok, Poland and Warsaw, Poland), T. Karpiuk (Białystok, Poland and Singapore, Singapore), K. Rzażewski (Warsaw, Poland and Stuttgart, Germany), J.B. Balewski, A.T. Krupp, A. Gaj, R. Löw, S. Hofferberth, and T. Pfau (Stuttgart, Germany)

How to take a picture of a Rydberg atom?

15.40-16.05 6.8.5 A. Burchianti, J.A. Seman (Sesto Fiorentino, Italy), G. Valtolina (Sesto Fiorentino and Pisa, Italy), M. Zaccanti, and M. Inguscio, G. Roati (Sesto Fiorentino, Italy)

All-optical production of a degenerate Fermi gas of ^6Li , towards quantum simulation of electronic many-body systems

16.05-16.30 6.8.6 J. Klaers, J. Schmitt, T. Damm, D. Dung, F. Vewinger, and M. Weitz (Bonn, Germany)

Thermalization and condensation dynamics of a two-dimensional photon gas

16.30-17.00 **Coffee break**

Seminar 6.9

Chairs: J. Brand (New Zealand) and B. Wu (China)

17.00-17.25 6.9.1 V. Melezhik (Dubna, Russia)

Ultracold collisional processes in 1D and 2D atomic traps

17.25-17.50 6.9.2 V.A. Yurovsky (Tel Aviv, Israel)

Selection rules related to the permutation symmetry of cold atoms with arbitrary spins

17.50-18.15 6.9.3 G.V. Shlyapnikov (Orsay, France)

Many-body physics with quantum gases in disorder

18.15-18.40 6.9.4 E. Kirilov, F. Meinert, M.J. Mark, K. Lauber, P. Weinmann, M. Gröbner, and H.-C. Nägerl (Innsbruck, Austria)

Ultracold molecular scattering with Cs₂ molecules

18.40-19.00 **Discussion**

Friday, July 18

Seminar 6.10

- Chairs:** V. Melezhik (Russia) and V.A. Yurovsky (Israel)
- 09.00-09.25 6.10.1 L. Tomio (Santo André and São Paulo, Brazil), A. Gammal (São Paulo), H.L.F. da Luz (Santo André, Brazil), and F.Kh. Abdullaev (Kuantan, Malaysia)
Solitons in atomic condensates, with optical lattices and field-induced dipole moments
- 09.25-09.50 6.10.2 B.K. Stuhl (Gaithersburg and College Park, USA), L. Aycoc (College Park and Ithaca, USA), D. Genkina (College Park, USA), A. Celi, P. Massignan (Barcelona, Spain), J. Ruseckas (Vilnius, Lithuania), N. Goldman (Paris, France), G. Juzeliunas (Vilnius, Lithuania), M. Lewenstein (Barcelona, Spain), and I.B. Spielman (Gaithersburg and College Park, USA)
Synthetic fields in synthetic dimensions
- 09.50-10.15 6.10.3 S. Furukawa and M. Ueda (Tokyo, Japan)
Quantum Hall states in two-component Bose gases in a synthetic magnetic field
- 10.15-10.30 **Discussion**
- 10.30-11.00 **Coffee break**

Seminar 6.11

- Chair:** L. Tomio (Brazil)
- 11.00-11.25 6.11.1 V. Penna (Torino, Italy), B. Capogrosso-Sansone (Oklahoma, USA), and M. Guglielmino (Torino, Italy)
Demixing effects in bosonic mixtures
- 11.25-11.50 6.11.2 A. Gammal (São Paulo, Brazil) and J.T. Mendonca (São Paulo, Brazil and Lisboa, Portugal)
Twisted phonons in Bose-Einstein condensates
- 11.50-12.15 6.11.3 N.G. Parker, G. Stagg, and C.F. Barenghi (Newcastle upon Tyne, UK)
Quantum wakes in Bose-Einstein condensates
- 12.20-14.00 **Lunch**

Seminar 6.12

- Chairs:** V. Penna (Italy) and M. Tsubota (Japan)
- 14.00-14.25 6.12.1 D. Cohen (Beer-Sheva, Israel)
The triangular Bose-Hubbard trimer as a minimal model for a superfluid circuit
- 14.25-14.50 6.12.2 Ch. Weiss (Durham, UK)
Quantum bright solitons in attractive Bose-Einstein condensates
- 14.50-15.15 6.12.3 V. Fleurov, S. Bar-Ad (Tel Aviv, Israel)
Analogue Hawking radiation in a nonlinear optical system
- 15.15-15.40 6.12.4 P. Deuar (Warsaw, Poland), J.-C. Jaskula, M. Bonneau, V. Krachmalnicoff, D. Boiron, C. I. Westbrook (Palaiseau, France), and K.V. Kheruntsyan (Brisbane, Australia)
Superradiance-like phenomena observed in atomic four-wave mixing
- 15.45-16.15 **Coffee break**

Seminar 6.13

	Chairs: D. Cohen (Israel) and Ch. Weiss (UK)
16.15-16.40	6.13.1 <u>S.S. Natu</u> , J. Radic, and V. Galitski (College Park, USA) <i>Spin dynamics in a spin-orbit coupled Fermi gas</i>
16.40-17.05	6.13.2 <u>S. Krönke</u> and P. Schmelcher (Hamburg, Germany) <i>Dynamics of dark and dark-bright solitons beyond the mean-field approximation</i>
17.05-17.30	6.13.3 <u>T. Swislocki</u> and P. Deuar (Warsaw, Poland) <i>Dynamics of atom pairs in a quantum quench of quasicondensates above Bogoliubov temperatures</i>
17.30-17.55	6.13.4 <u>O.N. Prudnikov</u> , A.V. Taichenachev, and V.I. Yudin (Novosibirsk, Russia) <i>3D theory of magneto-optical trap</i>
18.00	Closing Remarks

Poster Session, July 15, 19:45-21:00

	Chair: V.I. Yukalov (Russia)
P6.1	<u>A. Balaž</u> , B. Xiong (Belgrade, Serbia), and A. Pelster (Kaiserslautern, Germany) <i>Crossover from adiabatic to sudden quench dynamics for time-of-flight imaging measurements in Bose-Einstein condensates</i>
P6.2	<u>O.A. Koval</u> and E.A. Koval (Dubna, Russia) <i>Modeling of bound states of quantum systems in two-dimensional geometry of atomic traps</i>
P6.3	<u>E.A. Koval</u> , O.A. Koval, and V.S. Melezhik (Dubna, Russia) <i>Anisotropic quantum scattering in plane</i>
P6.4	A.S. Kuraptsev (Saint-Petersburg, Russia) <i>Density dependent modifications of the transition spectrum of an atom located inside cold atomic ensemble</i>
P6.5	T. Khellil (Berlin, Germany), A. Balaž (Belgrade, Serbia), and <u>A. Pelster</u> (Kaiserslautern, Germany) <i>Bose-Einstein condensation with strong disorder – Replica method</i>
P6.6	<u>A.A. Pelster</u> (Kaiserslautern, Germany) and Balaž (Belgrade, Serbia) <i>Bose-Einstein condensation with strong disorder -Gaussian approximation for correlation functions</i>
P6.7	<u>J. Pietraszewicz</u> and P. Deuar (Warsaw, Poland) <i>Validity and benchmarking of c-fields descriptions of the 1D interacting Bose gas at nonzero temperatures</i>
P6.8	<u>M. Tylutki</u> , S. Donadello, S. Serafini (Povo, Italy), L.P. Pitaevskii (Povo, Italy and Moscow, Russia), F. Dalfovo, G. Lamporesi, and G. Ferrari (Povo, Italy) <i>Expansion of solitonic vortices in a Bose-Einstein condensate</i>
P6.9	<u>V.I. Yukalov</u> and E.P. Yukalova (Dubna, Russia) <i>Critical region of Bose-Einstein condensation</i>

Seminar7
Quantum Information and Quantum Computation

Monday, July 14

Seminar 7.1

Chair: M. Genovese (Italy)

- 13.30-13.50 7.1.1 L.L. Sanchez-Soto (Madrid, Spain), J. Rehacek, B. Stoklasa, L. Motka, and Z. Hradil (Olomouc, Czech Republic)
Wavefront sensing reveals optical coherence
- 13.55-14.15 7.1.2 H. Schomerus (Lancaster, UK)
Topologically protected zero modes in electronic and optical systems
- 14.20-14.40 7.1.3 T. Spiller (York, UK)
Cool for cats
- 14.45-15.05 7.1.4 M. Stobińska (Gdansk, Poland)
Quantum walk simulation using multi-photon interference at a single beam splitter
- 15.10-15.25 7.1.5 Y. Miyamoto (Chofu, Japan)
Towards analysis and manipulation of orbital angular momentum entangled photon pairs with a path interferometer system
- 15.30-15.45 7.1.6 I.A. Ferraro (Belfast, UK)
Coherent extraction and entanglement engineering of confined continuous-variable systems
- 15.45-16.15 **Coffee break**

Seminar 7.2

Chair: L. Sanchez-Soto (Spain)

- 16.15-16.35 7.2.1 I. Ruo Berchera, I.P. Degiovanni, M. Genovese (Turin, Italy)
Quantum Light interferometers: toward testing quantum gravity on an optical bench
- 16.40-17.00 7.2.2 C. Macchiavello (Pavia, Italy)
Quantum channel detection
- 17.05-17.20 7.2.3 P.-L. de Assis (Grenoble, France), M. Araujo (Vienna, Austria), A. Cabello (Sevilla, Spain), M. Terra Cunha, J. Ferraz, G. Borges, M. Carvalho, and S. Padua (Belo Horizonte, Brazil)
Quantum contextuality in a young interference experiment
- 17.25-17.40 7.2.4 A. Walther, M. Sabooni, Q. Li, R.K. Mohan, L. Rippe, and S. Kröll (Lund, Sweden)
Efficient quantum memories based on cavity-enhanced rare-earth ions
- 17.45-18.00 7.2.5 I.M. Sokolov (St.-Petersburg, Russia)
Light trapping and localization in a cold and dense atomic ensemble
- 18.05-18.20 7.2.6 R.A. de Oliveira, M.S. Mendes, W.S. Martins, P.L. Saldanha, D. Felinto, and J.W.R. Tabosa (Recife, Brazil)
Nonlinear spectroscopy and superradiance in cold atom
- 18.25-18.40 7.2.7 N. Sinclair, W. Tittel (Calgary, Canada), C.W. Thiel, and R.L. Cone (Montana, USA)
Spectroscopic investigation of TM^{3+} :YGG for optical quantum memory

- 18.45-19.00 7.2.8 D.G. Angelakis (Chania, Greece)
From Mott transitions to interacting relativistic theories with light: towards the first experiments

Tuesday, July 15

Seminar 7.3

Chair: P. Tombesi (Italy)

- 13.30-13.50 7.3.1 S. Varró (Budapest, Hungary)
Quantum phase operator and projectors based on $SU(1,1)$ coherent states
- 13.55-14.15 7.3.2 P. Mataloni (Roma, Italy)
3-dimensional integrated photonic quantum simulation
- 14.20-14.40 7.3.3 P.C. Humphreys, B.J. Metcalf, J.B. Spring, M. Moore, X-M Jin, M. Barbieri, W.S. Kolthammer, and I.A. Walmsley (Oxford, UK)
Linear optical quantum computing in a single spatial mode
- 14.45-15.05 7.3.4 Z. Tang, Z. Liao, F. Xu, B. Qi, L. Qian, and H-K. Lo (Toronto, Canada)
Experimental measurement-device-independent quantum key distribution using polarization encoding over fiber
- 15.10-15.25 7.3.5 C. Noh, D.G. Angelakis (Singapore, Singapore), R. Keil, A. Rai, S. Stutzer, S. Nolte, and A. Szameit (Jena, Germany)
Optical simulation of the Majorana equation
- 15.30-15.45 7.3.6 I.Q. Chen, S. Yu, C. Zhang, C.H. Lai, and C.H. Oh (Singapore, Singapore)
Test of genuine multipartite nonlocality without inequalities
- 15.45-16.15 **Coffee break**

Seminar 7.4

Chair: P. Mataloni (Italy)

- 16.15-16.35 7.4.1 A. U'Ren (Mexico city, Mexico)
Generation of spatially-structured heralded single photons
- 16.40-17.00 7.4.2 P. Tombesi (Camerino, Italy)
Enhancing concatenated entanglement swapping by negative cold damping feedback
- 17.05-17.25 7.4.3 T.S. Iskhakov, A. Pérez, M.V. Chekhova, G. Leuchs (Erlangen, germany), S. Lemieux, R.W. Boyd (Ottawa, Canada), P. Sharapova, O.V. Tikhonova (Moscow, Russia)
Source of bright squeezed vacuum with an arbitrary number of spatial modes
- 17.30-17.50 7.4.4 S.V. Polyakov, T. Thomay, E.B. Flagg, E. Goldschmidt, V. Loo, and G.S. Solomon (Gaithersburg, USA)
Statistical methods for extracting temporal dynamics of a nonclassical source
- 17.55-18.15 7.4.5 A.K. Fedorov, E.O. Kiktenko, O.V. Man'ko, and V.I. Man'ko (Moscow, Russia)
Tomographic measure of asymmetry in two-qubit states
- 18.20-18.40 7.4.6 G.A. Struchalin, I. Pogorelov, K.S. Kravtsov, S.S. Straupe, and S.P. Kulik (Moscow, Russia)
Adaptive quantum state tomography of two-qubit polarization states
- 18.45-19.00 7.4.7 S. Lerch and A. Stefanov (Bern, Switzerland)
Adaptive quantum state estimation of an entangled qubit state

Seminar 7.5

Chair: C.-H. Oh (Singapore)

- 13.30-13.50 7.5.1 F. De Martini (Roma, Italy) and E. Santamato (Napoli, Italy)
Proof of the spin-statistics theorem by conformal quantum geometrodynamics
- 13.55-14.15 7.5.2 I. Straka, M. Ježek, L. Lachman, M. Miková, M. Mičuda, R. Filip,
(Olomouc, Czech Republic), G.S. Solomon (Gaithersburg, USA),
M. Khoshnagar, H. Majedi (Waterloo, Canada), A. Predojević, L. Butschek,
T. Huber, and G. Weihs (Innsbruck, Austria)
Photon statistics and entanglement generation from quantum dots
- 14.20-14.40 7.5.3 L. Deng, R.B. Li, C.J. Zhu, and E.W. Hagley (Gaithersburg, USA)
High-fidelity, weak-light polarization gate using room-temperature atomic vapor
- 14.45-15.05 7.5.4 D.V. Strekalov, I.K. Kulikov and N. Yu (Pasadena, USA)
Imaging of dark objects by intensity interferometry
- 15.10-15.25 7.5.5 I.O. Morin, K. Huang, J. Liu, H. Le Jeannic, J. Ruauudel, C. Fabre and
J. Laurat (Paris, France)
Remote creation of optical hybrid entanglement
- 15.30-15.45 7.5.6 S. Paganelli (Natal, Brazil), G. De Chiara (Belfast, UK), M. Moreno,
H. Perrin, and A. Sanpera (Barcelona, Spain)
*Detecting quantum phase transitions in spin models on two-dimensional
lattices by using the entanglement spectrum*
- 15.45-16.15 **Coffee break**

Seminar 7.6

Chair: F. De Martini (Italy)

- 16.15-16.35 7.6.1 Y.-H. Kim (Pohang, South Korea)
*Time-bin entangled photon pairs from spontaneous parametric down-
conversion pumped by a cw-multi-mode diode laser*
- 16.40-17.00 7.6.2 D.O. Akatiev, I.Z. Latypov, A.V. Shkalikov, and A.A. Kalachev
(Kazan, Russia)
*Backward-wave spontaneous parametric down-conversion in a periodically
poled KTP waveguide*
- 17.05-17.25 7.6.3 S. Olivares, M.G.A. Paris, (Milano, Italy), S. Ragy, G. Adesso
(Nottingham), I. Ruo-Berchera, I.P. Degiovanni, E.D. Lopaeva, G. Brida,
and M. Genovese (Torino, Italy)
*Target detection enhanced by quantum illumination: beating the noise by
photon number correlations*
- 17.30-17.50 7.6.4 K. Shimizu (Kanagawa, Japan)
Cheat-sensitive commitment of a classical bit via two-way quantum communication
- 17.55-18.15 7.6.5 D. Bacco, M. Canale, N. Laurenti, D.G. Marangon, M. Tomasin,
G. Vallone, and P. Villoresi (Padova, Italy)
Finite-size QKD and quantum randomness from the uncertainty principle
- 18.20-18.40 7.6.6 P. Horodecki (Gdansk, Poland)
TBA

Thursday, July 17

Seminar 7.7

Chair: L.C. Kwek (Singapore)

11.00-11.20 7.7.1 A. Allevi, M. Bondani (Como, Italy), M. Bina, and S. Olivares (Milano, Italy)

On-line phase-reference monitoring of quasi-optimal coherent-state receiver

11.25-11.45 7.7.2 N. Imoto (Osaka, Japan)

Frequency conversion of single photons with high-fidelity quantum information preservation

11.50-12.05 7.7.3 J. McLenaghan and F. Koenig (St. Andrews, UK)

Few-cycle per pulse compression and evolution of negative resonant radiation

12.10-12.25 7.7.4 L.J. Wright, M. Karpiński, and B.J. Smith (Oxford, UK)

Deterministic manipulation of spectral properties of light at the single photon level

12.30-14.00 **Lunch**

Seminar 7.8

Chair: R. Filip (Czech Republic)

14.00-14.20 7.8.1 M. Zukowski (Gdansk, Poland)

Entanglement witnesses and Bell inequalities for states of light

14.25-14.45 7.8.2 L.C. Kwek (Singapore, Singapore)

Engineering cluster states with spin-1/2 two-body systems via adiabatic evolution

14.50-15.10 7.8.3 D. Bruss, M. Epping, and H. Kampermann (Duesseldorf, Germany)

Designing Bell inequalities via Tsirelson bounds

15.15-15.35 7.8.4 K. Edamatsu, S.-Y. Baek, F. Kaneda (Sendai, Japan), and M. Ozawa (Nagoya, Japan)

Experimental test of error-disturbance uncertainty relations by weak measurement

15.40-16.00 7.8.5 M.V. Chekhova (Erlangen, Germany)

Nonclassical light from colloidal quantum dots and their clusters

16.05-16.25 7.8.6 T. Dirmeier, N. Jain, G. Leuchs, C. Marquardt (Erlangen, Germany),

G. Harder, V. Ansari, and C. Silberhorn (Paderborn, Germany)

Homodyning a pulsed single-mode waveguide parametric down-conversion source

16.30-17.00 **Coffee break**

Seminar 7.9

Chair: Y.-H. Kim (Korea)

17.00- 17.20 7.9.1 R. Filip (Olomouc, Czech Republic), M. Lassen, A. Berni,

L.S. Madsen, and U.L. Andersen (Lyngby, Denmark)

Extraction of non-classical light by interference

17.25-17.45 7.9.2 L. Happ, M.A. Efremov, W.P. Schleich (Ulm, Germany), and H. Nha (Seoul, Korea)

Novel condition for a quantum state to be Gaussian

17.50-18.10 7.9.3 K. Kato (Tokyo, Japan)

Properties of entangled coherent states with thermal noise

18.15-18.35 7.9.4 C. Lovecchio, S. Cherukattil, M. Ali-Khan, F.S. Cataliotti (Firenze, Italy)

Control of quantum dynamics on an atom-chip

18.40-19.00	7.9.5 S. Pirandola, C. Ottaviani, G. Spedalieri, S.L. Braunstein (York, UK), C. Weedbrook (Toronto, Canada), S. Lloyd (Cambridge, USA), <u>T. Gehring</u> , C.S. Jacobsen, and U.L. Andersen (Lyngby, Denmark) <i>High-rate quantum cryptography in untrusted networks</i>
19.05-19.25	7.9.6 A. Isar (Bucharest - Magurele, Romania) <i>Entanglement generation in two - mode gaussian systems in a thermal environment</i>
19.30-19.50	7.9.7 F. Plastina (Arcavacata di Rende, Italy) <i>Generation of quantum correlation in spin systems</i>

Friday, July 18

Seminar 7.10

	Chair: M. Chekhova (Germany)
09.00-09.20	7.10.1 F. Ciccarello (Palermo, Italy) <i>Single-photon scattering as a spectral density meter</i>
09.25-09.45	7.10.2 E. Bimbard, R. Boddeda, A. Grankin, I. Usmani, V. Parigi, J. Stanojevic, E. Brion, A. Ourjoumtsev, and <u>P. Grangier</u> (Palaiseau, France) <i>Quantum optics and quantum information with cold Rydberg atoms in an optical cavity</i>
09.50-10.05	7.10.3 L.A. Clark, T.M. Barlow, W. Huang, and <u>A. Beige</u> (Leeds, UK) <i>Enhancing quantum correlations of light sources with strong environmental feedback</i>
10.10-10.25	7.10.4 K. Katamadze (Moscow, Russia), <u>I.P. Degiovanni</u> , D. Gatto Monticone, J. Forneris, E. Moreva, P. Traina, I. Ruo Berchera, G. Bida, P. Olivero, and M. Genovese (Torino, Italy) <i>Sub-diffraction imaging of single-photon emitters</i>
10.30-11.00	Coffee break

Seminar 7.11

	Chair: A. Beige (UK)
11.00-11.20	7.11.1 M.V. Fedorov (Moscow, Russia) <i>Three-photon polarization ququarts: degree of polarization and entanglement</i>
11.25-11.45	7.11.2 A.S. Sheremet, L.V. Gerasimov, D.F. Kornovan, and <u>D.V. Kupriyanov</u> (Saint-Petersburg, Russia) <i>Cooperative light scattering and quantum interface between light and dense multilevel atomic system</i>
11.50-12.05	7.11.3 D.-S. Ding, <u>Z.-Y. Zhou</u> , B.-S. Shi, and G.-C. Guo (Hefei, China) <i>Single-photon-level quantum image memory based on cold atomic ensembles</i>
12.10-12.25	7.11.4 A.S. Kuraptsev (Saint-Petersburg, Russia) <i>Density dependent modifications of the transition spectrum of an atom located inside cold atomic ensemble</i>
12.30-14.00	Lunch

Seminar 7.12

	Chair: D. Kupriyanov (Russia)
14.00-14.20	7.12.1 P.H. Souto Ribeiro (Rio de Janeiro, Brazil) <i>Quantum simulation of the cooling of a cluster-state hamiltonian system</i>

- 14.25-14.40 7.12.2 J.B. Brask (Geneva, Switzerland), A. Máttar, D. Cavalcanti, P. Skrzypczyk, and A. Aćin (Barcelona, Spain)
Physical implementations for DIQKD
- 14.45-15.00 7.12.3 T. Ohshima (Kanagawa, Japan)
Application of techniques in atomic physics to coherent solid state devices towards quantum information processing
- 15.05-15.20 7.12.4 D. Aktaş, B. Fedrici, L. Labonte, and S. Tanzilli (Nice, France)
Entanglement-based quantum key distribution in standard telecom channels for long-distance multi-user. Network implementation
- 15.25-16.15 **Coffee break**

Seminar 7.13

- Chair:** P.S. Ribeiro (Brazil)
- 16.15-16.35 7.13.1 M. Förtsch, G. Schunk, J. Furst, F. Sedlmeir, D. Strekalov, H.G.L. Schwefel, G. Leuchs, C. Marquardt (Erlangen, Germany), T. Gerrits, M.J. Stevens, S.W. Nam (Boulder, USA)
Narrow-band single-mode photon pairs from a whispering gallery mode resonator
- 16.40-17.00 7.13.2 D. Sych and G. Leuchs (Erlangen, Germany)
Optimal receiver for coherent signals
- 17.05-17.25 7.13.3 C.R. Müller, G. Leuchs, and C. Marquardt (Erlangen, Germany)
Quantum state discrimination via optimized displacement receivers
- 17.30-17.50 7.13.4 F. Galve Conde, R. Vasile, and R. Zambrini (Palma de Mallorca, Spain)
Spectral origin of non-Markovian open-system dynamics: a finite harmonic model without approximations
- 17.55-18.00 7.13.5 S.Kulik (Moscow, Russia)
Closing remarks

Poster Session, July 15, 19:45-21:00

- Chair:** S. Kulik (Russia)
- P7.1 I.B. Bobrov, E.V. Kovlakov, A. Markov, S.S. Straupe, and S.P. Kulik (Moscow, Russia)
Detector tomography of spatial mode filters
- P7.2 I.V. Dyakonov (Moscow, Russia), P.R. Sharapova, T.Sh. Iskhakov, and G. Leuchs (Erlangen, Germany)
Schmidt number measurement of high-gain parametric down-conversion
- P7.3 K.G. Katamadze, N.A. Borshchevskaia, I.V. Dyakonov, A.V. Paterova, and S.P. Kulik (Moscow, Russia)
Broadband biphoton source, coupled with a single mode fiber
- P7.4 I.B. Bobrov, S.S. Straupe, E.V. Kovlakov, and S.P. Kulik (Moscow, Russia)
Quantum correlations of spatially entangled photons in the hermite-gaussian basis
- P7.5 S. Bose (London, UK), D. Home (Salt Lake, India), E. Moreva, M. Gramenga, G.Brida, and M. Genovese (Turin, Italy)
Testing of quantum indistinguishability unaffected by interaction via duality in entanglement
- P7.6 K. Rosolek, M. Stobińska, M. Wieśniak, and M. Żukowski (Gdansk, Poland)
Violation of chained bell inequalities by bright squeezed vacuum

- P7.7 P.R. Sharapova, O.V. Tikhonova (Moscow, Russia), A.M. Perez, M.V. Chekhova, and G. Leuchs (Erlagen, Germany)
Theoretical description of spatial correlations arising in bright squeezed vacuum by means of Bloch-Messiah reduction and Schmidt modes formalism
- P7.8 B. Gouraud, A. Nicolas, D. Maxein, J. Laurat (Paris, France), A.S. Sheremet, D. Kornovan, and D.V. Kupriyanov (Saint-Petersburg, Russia)
Cooperative interaction of light with a spatially dense atomic system
- P7.9 V.I. Yukalov (Dubna, Russia) and D. Sornette (Geneva, Switzerland)
Quantum theory of measurements as quantum decision theory
- P7.10 S.S. Straupe (Moscow, Russia) A.M. Pérez, M.V. Chekhova, and G. Leuchs (Erlangen, Germany)
Lossless filtering of a single-mode of bright squeezed vacuum in angular variables
- P7.11 N.I. Miklin and M.V. Fedorov (Moscow, Russia)
Entanglement of multi-photon polarization Fock states

Seminar 8

Fiber Optics

Thursday, July 17

Seminar 8.1

Chair: C. Mou (UK)

- 11.15-11.45 8.1.1 D.Y. Tang (Singapore), L.M. Zhao, D.Y. Shen (Xuzhou, China)
Simultaneous ultrafast dark-bright pulse pair emission of fiber lasers (invited)
- 11.50-12.10 8.1.2 M. Klimczak, G. Soboń, J. Cimek, J. Sotor, D. Pysz, R. Stepień,
K.K. Abramski, and R. Buczyński (Warsaw, Poland)
*Role of Raman scattering in NIR supercontinuum formation in all-normal
dispersion soft glass photonic crystal fibers in the sub-picosecond pump regime*
- 12.10-12.30 8.1.3 O. Pottiez, B. Ibarra-Escamilla, and E.A. Kuzin (Leon-Puebla, Mexico)
Erbium-Raman noise-like pulses from a figure-eight fibre laser
- 12.30-14.00 **Lunch**

Seminar 8.2

Chair: D.Y. Tang (Singapore)

- 14.00-14.30 8.2.1 C. Mou, S. Sergeyev, R. Arif, A. Rozhin, Z. Yan, K. Zhou, Z. Zhang,
V. Tsaturian, T. Habruseva, L. Zhang, and S. Turitsyn (Birmingham, UK)
All-fibre mode locked fibre laser and its polarisation dynamics (invited)
- 14.35-15.05 8.2.2 I. Pavlov, E. Dulgergil, E. Ilbey, P. Elahi I, and F.Ö. Ilday (Ankara, Turkey)
*High-power single-mode amplifier based on Er-Yb co-doped fibers: Amplification
of femtosecond, nanosecond and single-frequency CW signals (invited)*
- 15.10-15.35 8.2.3 A.V. Dostovalov, A.A. Wolf, S.A. Babin (Novosibirsk, Russia),
M.V. Dubov, and V.K. Mezentssev (Birmingham, UK)
*Femtosecond laser writing of Bragg and long-period fiber gratings at the
wavelengths of 1026 and 513 nm*
- 15.35-16.05 8.2.4 H. Ahmad, M. Dernaika, M. Z. Zulkifli, S. W. Harun (Kuala Lumpur,
Malaysia)
*Tunable, narrow and power efficient single longitudinal mode fiber ring laser
based on graphene oxide deposit on dual taper Mach Zehnder interferometer*
- 16.15-16.45 **Coffee break**

Seminar 8.3

Chair: H. Ahmad (Malaysia)

- 16.45-17.15 8.3.1 Y.J. Rao, W.L. Zhang, and Z.N. Wang (Chengdu, China)
Random fiber lasers and applications (invited)
- 17.20-17.45 8.3.2 S.A. Babin, I.D. Vatik, A.Yu. Laptev, M.M. Bubnov, and
E.M. Dianov (Novosibirsk, N. Novgorod, and Moscow, Russia)
*High-efficiency cascaded generation of a phosphosilicate fiber Raman laser
with random distributed feedback*

- 17.45-18.15 8.3.3. S.W. Harun, I.M. Babar, Z. Jusoh, M.B.S. Sabran, H. Ahmad (Kuala Lumpur, Malaysia), A. Halder, M.C. Paul, S. Das, and S.K. Bhadra (Kolkata, India)
New Thulium Ytterbium co-doped fiber laser operating at 1.9 micron region based on orthogonal shaped double-clad fiber
- 18.15-18.40 8.3.4 K.E. Riumkin, M.A. Melkumov, A.V. Shubin, S.V. Firstov, I.A. Bufetov, V.F. Khopin, A.N. Guryanov, and E.M. Dianov (Moscow and N. Novgorod, Russia)
Superfluorescent bismuth-doped fiber source at 1.34 μm

Poster Session, July 15, 19:45-21:00

- P8.1 A.K. Fedorov, V. Lazarev, I. Makhrov, N. Pozhar, M. Anufriev, and A. Pnirov (Moscow, Russia)
Structural monitoring system with fiber Bragg grating sensors: implementation and software solution
- P8.2 S.V. Firstov, S.V. Alyshev, V.F. Khopin, K.E. Riumkin, S.V. Shubin, M.A. Melkumov, O.I. Medvedkov, A.N. Guryanov, and E.M. Dianov (Moscow and N. Novgorod, Russia)
CW operation of Bismuth fiber laser in 1625–1775-nm range

Extreme Light Technologies, Science, and Applications Symposium

Monday, July 14

Seminar S.1

Chair: A.M. Sergeev (Russia)

13.30-14.05 S.1.1 G. Mourou (Palaiseau, France)

Extreme light: beyond today's horizon

14.05-14.35 S.1.2 S.P. Kim (Kunsan, Korea)

Strong QED phenomena in intense lasers

14.35-15.05 S.1.3 A.A. Mironov, N.B. Narozhny, and A.M. Fedotov (Moscow, Russia)

Collapse and revival of QED cascades in laser pulses

14.05-15.35 S.1.4 H. Takabe and T. Moritaka (Osaka, Japan)

Induced vacuum breakdown and pair plasma production for fundamental and high-energy astrophysics science

15.45-16.15

Coffee break

Seminar S.2

Chair: A. Rudenko (USA)

16.15-16.45 S.2.1 A. Lachapelle, S. Fourmaux, K. Otani, M. Glessner, P. Antici,

S. MacLean, and J.C. Kieffer (Varennes, Canada)

Direct laser field electron acceleration at intensities up to $2 \times 10^{22} \text{ W/cm}^2$

16.45-17.10 S.2.2 T. Fennel (Rostock, Germany)

Attosecond control and imaging of cluster dynamics in strong fields

17.10-17.35 S.2.3 C. Rödel, J. Bierbach, E. Eckner, M. Wünsche, S. Fuchs, and

G.G. Paulus (Jena, Germany)

Relativistic surface high-harmonic generation

17.35-18.00 S.2.4 I.Yu. Kostyukov and E.N. Nerush (Nizhny Novgorod, Russia)

Conservation-law approach to analyzing laser-solid interaction in radiation-dominated and near QED regime

18.00-18.25 S.2.5 N.M. Naumova (Palaiseau, France), I.V. Sokolov, J.A. Nees (Ann Arbor, MI, USA), R. Lopez-Martens, and G.A. Mourou (Palaiseau, France)

Interaction of parametrically compressed laser pulses with solid targets

Tuesday, July 15

Seminar S.3

Chair: N.B. Narozhny (Russia)

13.30-14.00 S.3.1 C.H. Keitel, A. Di Piazza, S. Meuren (Heidelberg, Germany),

C. Müller (Düsseldorf, Germany), and S. Müller (Heidelberg, Germany)

High-energy physics with extremely intense laser pulses

14.00-14.25 S.3.2 A. Di Piazza (Heidelberg, Germany)

Ultrarelativistic electron states in a general background electromagnetic field

14.25-14.50 S.3.3 A.M. Fedotov (Moscow, Russia), N.V. Elkina (München, Germany),

E.G. Gelfer, and N.B. Narozhny (Moscow, Russia)

Radiation reaction vs ponderomotive effect

14.50-15.15 S.3.4 V. Dinu, T. Heinzl, A. Ilderton, M. Marklund, and G. Torgrimsson

(Gothenburg, Sweden)

Vacuum birefringence and polarisation-flip in strong-field QED

- 15.15-15.40 S.3.5 M.J.A. Jansen and C. Müller (Düsseldorf, Germany)
Electron-positron pair creation in bichromatic laser fields
- 15.45-16.15 **Coffee break**

Seminar S.4

- Chair:** J.C. Kieffer (Canada)
- 16.15-16.40 S.4.1 D. Margarone and G. Korn (Prague, Czech Republic)
The ELIMAIA (ELI Multidisciplinary Applications of laser-Ion Acceleration) target area at ELI-Beamlines
- 16.40-17.05 S.4.2 A. Savel'ev, K. Ivanov, S. Shulyapov, I. Tsymbalov, A. Drobinin, D. Urupina, R. Volkov, A. Brantov, S. Bochkarev, P. Ksenofontov, and V. Bychenkov (Moscow, Russia)
Relativistic electron laser acceleration in a long scale-length near critical plasma
- 17.05-17.30 S.4.3 A. Rudenko (Manhattan, KS, USA)
X-ray ionization of matter under extreme conditions
- 17.30-17.55 S.4.4 A.A. Gonoskov, E.S. Efimenko, A.V. Bashinov, A.A. Muraviev, A.V. Kim, and A.M. Sergeev (Nizhny Novgorod, Russia)
Nonlinear interaction of ultra-relativistic counterpropagating circularly polarized laser pulses with plasmas in radiation-dominated and QED regimes
- 17.55-18.20 S.4.5 A.V. Brantov and V.Yu. Bychenkov (Moscow, Russia)
Optimization study for isotope production with laser

Wednesday, July 16

Seminar S.5

- Chair:** A. Di Piazza (Germany)
- 13.30-14.00 S.5.1 A. Ilderton (Gothenburg, Sweden)
Nonperturbative pair creation in strong fields, and zero modes
- 14.00-14.25 S.5.2 K. Homma (Hiroshima, Japan / IZEST, Ecole Polytechnique, France)
Toward laboratory search for sub-eV neutral bosons via resonances by stimulated photon-photon collider
- 14.25-14.50 S.5.3 D. Blaschke (Wroclaw, Poland), V.V. Dmitriev (Saratov, Russia), L. Juchnowski (Wroclaw, Poland), A.D. Panferov, S.A. Smolyansky, and A.V. Prozorkevich (Saratov, Russia)
WKB-type approximations in the theory of vacuum particle creation in laser fields
- 14.50-15.15 S.5.4 R. Schützhold (Duisburg, Germany)
Dynamically assisted Sauter-Schwinger effect in inhomogeneous fields
- 15.15-15.40 S.5.5 C. Schubert (Morelia, Mexico)
Schwinger pair creation in electric fields
- 15.45-16.15 **Coffee break**

Seminar S.6

- Chair:** R. Schützhold (Germany)
- 16.15-16.40 S.6.1 C. Harvey (Belfast, UK)
Nonlinear Compton scattering with ultra-high intensity laser pulses
- 16.40-17.05 S.6.2 H.R. Reiss (Berlin, Germany)
Ponderomotive potential and the intense-field mass shell

- 17.05-17.30 S.6.3 B. King (Plymouth, UK), H. Ruhl (München, Germany),
M.V. Legkov, and A.M. Fedotov (Moscow, Russia)
Polarisation effects in a constant crossed field
- 17.30-17.55 S.6.4 A. Noble, S. Yoffe, Y. Kravets, and D. Jaroszynski (Glasgow, UK)
Electron beam dynamics and radiation reaction
- 17.55-18.20 S.6.5 E.G. Gelfer (Moscow, Russia), V.F. Bashmakov, I.Yu. Kostyukov
(Nizhny Novgorod, Russia), A.A. Mironov, A.M. Fedotov, and
N.B. Narozhny (Moscow, Russia)
*Perspectives of implementing QED cascade production with the next
generation of laser facilities*

Poster Session, July 15, 19:45-21:00

- Chair:** E.G. Gelfer (Russia)
- PS.1 I.I. Balchev, N.I. Minkovski, K.D. Dimitrov and A.P. Atanasov (Sofia, Bulgaria)
Nanosecond pulse-laser micromachining of titanium wafers by CuBr laser
- PS.2 D. Berényi, S. Varró (Budapest, Hungary), V.V. Skokov (Kalamazoo, MI,
USA), and P. Lévai (Budapest, Hungary)
Pair production from space- and time-dependent strong fields