

**15TH INTERNATIONAL LASER PHYSICS WORKSHOP
(LPHYS'06)
JULY 24-28, 2006, LAUSANNE, SWITZERLAND**

ORGANIZED BY:

*A.M. Prokhorov General Physics Institute, Russian Academy of Sciences
(RAS), Moscow, Russia
L'Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne,
Switzerland
The international journal Laser Physics
The international journal Laser Physics Letters
International Laser Center, Moscow State University, Moscow, Russia
Russian Research Center "Kurchatov Institute", Moscow, Russia*

SPONSORED BY:

*Russian Foundation for Basic Research, Moscow, Russia
Swiss National Science Foundation, Berne, Switzerland
Ministry of Education and Science of Russian Federation, Moscow, Russia
United States European Office of Aerospace Research and Development
U.S. Army International Technology Center-Atlantic, European Research
Office
International Laser Center of Moscow State University, Moscow, Russia
Russian Research Center "Kurchatov Institute", Moscow, Russia
Astro Ltd., Little Rock, AR, USA*

CHAIRMEN:

Hans G. Limberger Swiss Federal Institute of Technology, Lausanne,
Switzerland
Pavel P. Pashinin A.M. Prokhorov General Physics Institute, RAS,
Moscow, Russia
Markus Pollnau University of Twente, Enschede, The Netherlands,
Swiss Federal Institute of Technology, Lausanne,
Switzerland

STEERING COMMITTEE:

Dusan Chorvat	International Laser Center, Bratislava, Slovak Republic
Joseph H. Eberly	University of Rochester, Rochester, USA
Mikhail V. Fedorov	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
Sergey A. Gonchukov	Moscow State Engineering Physics Institute, Moscow, Russia
Günter Huber	Hamburg University, Hamburg, Germany
Hans G. Limberger	Swiss Federal Institute of Technology, Lausanne, Switzerland
Pavel P. Pashinin	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
Markus Pollnau	University of Twente, Enschede, The Netherlands, Swiss Federal Institute of Technology, Lausanne, Switzerland
Kirill A. Prokhorov	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
Wolfgang Sandner	Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany
Toshi Tajima	Kansai Photon Science Institute, Japan Atomic Energy Agency, Kyoto, Japan
Herbert Walther	Max-Planck Institute of Quantum Optics, Garching, Germany
Valery M. Yermachenko	Moscow State Engineering Physics Institute, Moscow, Russia
Igor V. Yevseyev	Moscow State Engineering Physics Institute, Moscow, Russia
Vyacheslav I. Yukalov	Joint Institute for Nuclear Research, Dubna, Russia
Aleksey M. Zheltikov	Moscow State University, Moscow, Russia

ADVISORY & PROGRAM COMMITTEE:

P. Agostini	CEA/CE, Saclay, France
S.N. Bagayev	Institute of Laser Physics, RAS, Novosibirsk, Russia
V. S. Bagnato	University de San Paulo, San Carlos, Brazil

W. Becker	Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany
S.L. Chin	Laval University, Quebec, Canada
G. Denardo	The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy
S. De Silvestri	Politecnico di Milano, Milano, Italy
E.M. Dianov	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
G. Ferrante	Palermo University, Palermo, Italy
C. Fotakis	Foundation for Research and Technology Hellas, Heraklion, Greece
M.D. Girardeau	University of Arizona, Tucson, USA
M. Jelinek	Institute of Physics, Czech Academy of Sciences, Prague, Czech Republic
Y. Kato	Kansai Photon Science Institute, Japan Atomic Energy Agency, Kyoto, Japan
U. Keller	ETH Zürich, Zürich, Switzerland
V.I. Konov	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
N. Kroo	Research Institute for Solid State Physics and Optics, HAS, Budapest, Hungary
F. Krausz	Max-Planck-Institut für Quantenoptik, Garching, Germany
S.P. Kulik	Moscow State University, Moscow, Russia
A.S. Kurkov	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
J. Lademann	Humboldt University, Berlin, Germany
V.A. Makarov	Moscow State University, Moscow, Russia
D. Mathur	Tata Institute of Fundamental Research, Mumbai, India
F. Mendoza S.	Centro de Investigaciones en Óptica, León, Mexico
G.A. Mesyats	Vice-President of RAS, Moscow, Russia
V.B. Morozov	Moscow State University, Moscow, Russia
K. Petermann	Hamburg University, Hamburg, Germany
G. Petite	CEA/DSM/DRECAM, Saclay, France
L.P. Pitaevskii	University of Trento, Trento, Italy
P.M. Saari	Tartu Institute of Physics, Tartu, Estonia
R.-P. Salathé	EPF Lausanne, Lausanne, Switzerland

V.V. Samartsev	Kazan Physics Technical Institute, RAS, Kazan, Russia
V.M. Shalaev	Purdue University, West Lafayette, USA
I.A. Shcherbakov	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
D.P. Shepherd	University of Southampton, Southampton, UK
G.V. Shlyapnikov	LPTMS, Orsay, France
I.T. Sorokina	Vienna University of Technology, Vienna, Austria
O. Svelto	Politecnico di Milano, Milan, Italy
E.A. Vinogradov	Institute of Spectroscopy, RAS, Troitsk, Russia
K. Ueda	University of Electro-Communications, Tokyo, Japan
I.A. Walmsley	Oxford University, Oxford, UK
E. Wintner	Vienna University of Technology, Vienna, Austria
E. Zaremba	Queen's University, Kingston, Canada
N.V. Znamenskiy	Russian Research Center "Kurchatov Institute", Moscow, Russia

LOCAL ORGANIZING COMMITTEE:

Chairman:

Hans G. Limberger	Swiss Federal Institute of Technology, Lausanne, Switzerland
--------------------------	--

Members:

Feridun Ay	MESA+ institute for Nanotechnology, Enschede, The Netherlands
Yvette Bernard	Swiss Federal Institute of Technology, Lausanne, Switzerland
Manuelle Borruat	Swiss Federal Institute of Technology, Lausanne, Switzerland
Christian Ban	Swiss Federal Institute of Technology, Lausanne, Switzerland
Camelia Borca	Swiss Federal Institute of Technology, Lausanne, Switzerland

Rodrigue Chatton	Swiss Federal Institute of Technology, Lausanne, Switzerland
Dragan Coric	Swiss Federal Institute of Technology, Lausanne, Switzerland
Florent Gardillou	Swiss Federal Institute of Technology, Lausanne, Switzerland
Gerard Harbach	Swiss Federal Institute of Technology, Lausanne, Switzerland
Yari Luchessa	Swiss Federal Institute of Technology, Lausanne, Switzerland
Thomas Sidler	Swiss Federal Institute of Technology, Lausanne, Switzerland
Yann Tissot	Swiss Federal Institute of Technology, Lausanne, Switzerland

Background

The fifteenth annual International Laser Physics Workshop (LPHYS'06) will be held from July 24 to July 28, 2006 in L'Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland. LPHYS'06 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, and Kyoto 2005.

The total number of participants is expected to be about 300. In the past, participation was typically from over 30 countries.

Proceedings

The Workshop materials accepted by the Steering and Advisory & Program Committees (plenary, invited, and contributed) will be published in # 2 and # 4 of the international journal Laser Physics, 2007 (vol. 17). The total length of manuscript, including figures, tables and references, is limited to twelve pages. The rules of the manuscript preparation can be found on the Laser Physics web site:

<http://www.lasphys.com>

Two hard copies (no e-mail versions of papers please) of manuscripts to be published in the Laser Physics journal can be either given to Prof. Igor V. Yevseyev, the Deputy Editor-in-Chief of Laser Physics, during LPHYS'06 or mailed to:

Prof. Igor V. Yevseyev
Department of Theoretical Physics
Moscow State Engineering Physics Institute
31, Kashirskoe Shosse
Moscow 115409
Russia

Two hard copies of your manuscripts are to be received by the Editorial Office of the journal Laser Physics in Moscow not later than on September 1, 2006.

Please point out the number of your report according to the Program of the Workshop.

The Steering Committee of LPHYS'06 kindly asks the participants to simultaneously send the e-mail versions of their manuscripts to the following e-mail address: lphys06@lasphys.com.

**The possible rapid publication of your scientific results in the journal
Laser Physics Letters**

The Steering Committee of LPHYS'06 would like to bring your attention to the following possibility. If you feel that your manuscript deserves rapid publication, you can send it only by e-mail staffeditor@lasphys.com to another journal, the journal Laser Physics Letters. In case your manuscript receives positive reports of referees, its on-line version will appear two weeks after the acceptance of the paper. The information concerning your manuscript submission and instructions for manuscript preparation for the journal Laser Physics Letters can be found on:

<http://www.lasphys.com>

Scientific Seminars

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

Seminar 1 Modern Trends in Laser Physics

Co-Chairs: Thomas Feurer (Switzerland), Franz X. Kärtner (USA), and Kirill A. Prokhorov (Russia)

Seminar 2 Strong Field Phenomena

Co-Chairs: Wilhelm Becker (Germany), Jens Biegert (Switzerland), and Mikhail V. Fedorov (Russia)

Seminar 3 Biophotonics

Co-Chairs: Vanderlei S. Bagnato (Brazil), Sergey A. Gonchukov (Russia), and Jürgen Lademann (Germany)

Seminar 4 Physics of Lasers

Co-Chairs: Günter Huber (Germany), Ivan A. Shcherbakov (Russia), and Alessandra Toncelli (Italy)

Seminar 5 Nonlinear Optics and Spectroscopy

Co-Chairs: See Leang Chin (Canada), Christos Flytzanis (France), and Vladimir A. Makarov (Russia)

Seminar 6 Physics of Cold Trapped Atoms

Co-Chairs: Lev P. Pitaevskii (Italy), Vyacheslav I. Yukalov (Russia), and Eugene Zaremba (Canada)

Seminar 7 Quantum Information and Computation

Co-Chairs: Nicolas Gisin (Switzerland), Sergei P. Kulik (Russia), and Leong Chuan Kwek (Singapore)

Meeting Format and Location of the Events

Hall SG1	First Floor, SG Building
Hall SG0211	Basement, SG Building
Hall SG0213	Basement, SG Building
Hall AAC008	Basement, SG Building
Hall AAC014	Basement, SG Building

Poster Session	Foyer "Le Corbusier" in front of the conference Halls SG0211 and SG0213		
Coffee Breaks	Foyer in front of the conference Hall SG1		
Welcome Party	Foyer "Le Corbusier" in front of the conference Halls SG0211 and SG0213		
Conference Dinner	the EPFL Campus, Restaurant "Le Parmentier"		
Welcome Remarks	July 24	09.15-09.45	Hall SG1
Welcome Party	July 24	19.30-23.00	Restaurant "Le Parmentier"
Conference Dinner	July 26	19.30-23.00	Restaurant "Le Parmentier"
Closing Remarks	July 28	18.50-19.00	Hall SG1
Plenary Sessions (PS)			
	July 24	09.45-10.30	Hall SG1
	July 25	09.00-09.45	Hall SG1
	July 25	09.45-10.30	Hall SG1
	July 26	09.00-09.45	Hall SG1
	July 26	09.45-10.30	Hall SG1
	July 27	09.00-09.45	Hall SG1
	July 27	09.45-10.30	Hall SG1
	July 28	09.00-09.45	Hall SG1
	July 28	09.45-10.30	Hall SG1
A.M. Prokhorov Memorial Session			
	July 24	11.00-12.45	Hall SG1
Seminar 1			
	July 24	14.00-18.50	Hall SG0213
	July 25	11.00-12.45	Hall SG0213
	July 26	11.00-18.50	Hall SG0213
	July 27	11.00-18.50	Hall AAC014
Seminar 2			
	July 24	14.00-18.50	Hall SG0211
	July 25	14.00-18.50	Hall SG0211
	July 26	11.00-18.50	Hall SG0211
	July 27	11.00-18.50	Hall SG1
	July 28	11.00-18.50	Hall SG1

Seminar 3	July 24	14.00-18.50	Hall AAC014
	July 25	11.00-18.50	Hall AAC014
Seminar 4	July 24	14.00-18.50	Hall AAC008
	July 25	11.00-18.50	Hall AAC008
Seminar 5	July 26	11.00-18.50	Hall AAC008
	July 27	11.00-18.50	Hall AAC008
Seminar 6	July 24	14.00-18.50	Hall SG1
	July 25	11.00-18.50	Hall SG1
	July 26	11.00-18.50	Hall SG1
	July 27	11.00-18.50	Hall SG0211
	July 28	11.00-18.50	Hall SG0211
Seminar 7	July 25	11.00-12.45	Hall SG0211
	July 25	14.00-18.50	Hall SG0213
	July 26	11.00-18.50	Hall AAC014
	July 27	11.00-18.50	Hall SG0213
	July 28	11.00-18.50	Hall SG0213
Poster Session	July 25	19.30-21.00	Foyer "Le Corbusier" in front of the conference Halls SG0211 and SG0213.

The posters can be put up on Tuesday morning, July 25.

Scientific Program - Schedule

Monday, July 24, 2006					
	Hall SG1	Hall SG0211	Hall SG0213	Hall AAC008	Hall AAC014
09.15-09.45	Welcome Remarks				
09.45-10.30	PS1: Sandoghdar				
10.30-11.00	Coffee Break				
11.00-12.45	A.M. Prokhorov Memorial Session				
12.45-14.00	Lunch				
14.00-16.15	Seminar 6.1	Seminar 2.1	Seminar 1.1	Seminar 4.1	Seminar 3.1
16.15-16.45	Coffee Break				
16.45-18.50	Seminar 6.2	Seminar 2.2	Seminar 1.2	Seminar 4.2	Seminar 3.2
19.30-23.00	Welcome Party				

Tuesday, July 25, 2006					
	Hall SG1	Hall SG0211	Hall SG0213	Hall AAC008	Hall AAC014
09.00-09.45	PS2: Tünnermann				
09.45-10.30	PS3: French				
10.30-11.00	Coffee Break				
11.00-12.45	Seminar 6.3	Seminar 7.1	Seminar 1.3	Seminar 4.3	Seminar 3.3
12.45-14.00	Lunch				
14.00-16.15	Seminar 6.4	Seminar 2.3	Seminar 7.2	Seminar 4.4	Seminar 3.4
16.15-16.45	Coffee Break				
16.45-18.50	Seminar 6.5	Seminar 2.4	Seminar 7.3	Seminar 4.5	Seminar 3.5
19.30-21.00	Poster Session				

Wednesday, July 26, 2006					
	Hall SG1	Hall SG0211	Hall SG0213	Hall AAC008	Hall AAC014
09.00-09.45	PS4: Mathur				
09.45-10.30	PS5: Gisin				
10.30-11.00	Coffee Break				
11.00-12.45	Seminar 6.6	Seminar 2.5	Seminar 1.4	Seminar 5.1	Seminar 7.4
12.45-14.00	Lunch				
14.00-16.15	Seminar 6.7	Seminar 2.6	Seminar 1.5	Seminar 5.2	Seminar 7.5
16.15-16.45	Coffee Break				
16.45-18.50	Seminar 6.8	Seminar 2.7	Seminar 1.6	Seminar 5.3	Seminar 7.6
19.30-23.00	Conference Dinner				

Thursday, July 27, 2006					
	Hall SG1	Hall SG0211	Hall SG0213	Hall AAC008	Hall AAC014
09.00-09.45	PS6: Salathé				
09.45-10.30	PS7: Eggleton				
10.30-11.00	Coffee Break				
11.00-12.45	Seminar 2.8	Seminar 6.9	Seminar 7.7	Seminar 5.4	Seminar 1.7
12.45-14.00	Lunch				
14.00-16.15	Seminar 2.9	Seminar 6.10	Seminar 7.8	Seminar 5.5	Seminar 1.8
16.15-16.45	Coffee Break				
16.45-18.50	Seminar 2.10	Seminar 6.11	Seminar 7.9	Seminar 5.6	Seminar 1.9

Friday, July 28, 2006					
	Hall SG1	Hall SG0211	Hall SG0213	Hall AAC008	Hall AAC014
09.00-09.45	PS8: Noda				
09.45-10.30	PS9: Girardeau				
10.30-11.00	Coffee Break				
11.00-12.45	Seminar 2.11	Seminar 6.12	Seminar 7.10		
12.45-14.00	Lunch				
14.00-16.15	Seminar 2.12	Seminar 6.13	Seminar 7.11		
16.15-16.45	Coffee Break				
16.45-18.50	Seminar 2.13	Seminar 6.14	Seminar 7.12		
18.50-19.00	Closing Remarks				

Plenary Sessions

Monday, July 24

Welcome Remarks

- 09.15-09.24 **Hans G. Limberger** (Co-Chairman of LPHYS'06, Switzerland)
09.24-09.31 **Joseph H. Eberly** (Member of the Steering Committee of LPHYS'06, USA)
09.31-09.38 **Sergey A. Gonchukov** (Member of the Steering Committee of LPHYS'06, Russia)
09.38-09.45 **Markus Pollnau** (Co-Chairman of LPHYS'06, Switzerland)
-

Monday, July 24

PLENARY SESSION (PS1)

Chair: M. Pollnau (Switzerland)

- 09.45-10.30 **Vahid Sandoghdar** (Zürich, Switzerland)
Interaction of Light with Single Emitters and Nanoparticles
-

Tuesday, July 25

PLENARY SESSION (PS2)

Chair: H. Walther (Germany)

- 09.00-09.45 **Andreas Tünnermann** (Jena, Germany)
High Power Fiber Lasers and Amplifiers

PLENARY SESSION (PS3)

Chair: W. Sandner (Germany)

- 09.45-10.30 **Paul M.W. French** (London, UK)
Multidimensional Fluorescence Imaging
-

Wednesday, July 26

PLENARY SESSION (PS4)

Chair: J.H. Eberly (USA)

- 09.00-09.45 **Deepak Mathur** (Mumbai, India)
Clusters in Strong Laser Light: Science and Applications

PLENARY SESSION (PS5)

Chair: S.P. Kulik (Russia)

- 09.45-10.30 **Nicolas Gisin** (Geneva, Switzerland)
Quantum Communication in Telecom Networks

Thursday, July 27

PLENARY SESSION (PS6)

Chair: J. Lademann (Germany)

09.00-09.45 **René-Paul Salathé** (Lausanne, Switzerland)
*From Surgery to Tweezers - Some Laser Developments in
Biophotonics*

PLENARY SESSION (PS7)

Chair: H.G. Limberger (Switzerland)

09.45-10.30 **Benjamin J. Eggleton** (Sydney, Australia)
New Frontiers in Photonic Crystal Fibres

Friday, July 28

PLENARY SESSION (PS8)

Chair: M.V. Fedorov (Russia)

09.00-09.45 **Susumu Noda** (Kyoto, Japan)
Recent Progresses in Photonic Crystals

PLENARY SESSION (PS9)

Chair: V.I. Yukalov (Russia)

09.45-10.30 **Marvin D. Girardeau** (Tucson, USA)
*Exact Properties of Strongly Correlated Ultracold Gases in
Tight Waveguides*

Monday, July 24

A.M. Prokhorov Memorial Session

Chair: V.I. Konov (Russia)

11.00-11.15 **From the Chair of Session**

11.15-12.00 **Herbert Walther** (Garching, Germany)
*The quantum laser and maser - more than 50 years after
Prokhorov's maser work*

12.00-12.45 **Evgeny M. Dianov** (Moscow, Russia)
CW Fiber Lasers for Near IR

Friday, July 28

Closing Remarks

Chair: V.I. Yukalov (Russia)

18.50-18.53 **Alexander V. Kir'yanov** (Deputy Chairmen of LPHYS'07)

18.53-18.57 General Discussion

18.57-19.00 From the Chair

Seminar 1
Modern Trends in Laser Physics

Monday, July 24

Seminar 1.1

Chair: M. Ivanov (Canada)

- 14.00-14.30 1.1.1 J.H. Eberly, B.D. Clader (Rochester, NY, USA), and Q-Han Park (Seoul, Korea)
Fast light in transient gain media
- 14.30-14.45 1.1.2 J. Evers, M. Kiffner, and Ch. Keitel (Heidelberg, Germany)
Quantum interference enforced by time-energy complementarity
- 14.45-15.10 1.1.3 A.A. Klyachko and A.A. Shumovsky (Bilkent, Ankara, Turkey)
General approach to quantum entanglement
- 15.10-15.35 1.1.4 P. Saari (Tartu, Estonia)
Ultralocalized superluminal light pulses
- 15.35-15.55 1.1.5 R.F. O'Connell (Baton Rouge, LA, USA)
Decoherence due to the zero-point oscillations of the electromagnetic field
- 15.55- 16.15 1.1.6 S.E. Skipetrov and B.A. van Tiggelen (Grenoble, France)
Anderson localization of light
- 16.15-16.45 **Coffee break**

Seminar 1.2

Chair: K. Prokhorov (Russia)

- 16.45-17.15 1.2.1 N.I. Zheludev (Southampton, United Kingdom)
Nanophotonics and plasmonics under a scanning electron microscope
- 17.15-17.40 1.2.2 R. Lecaque, S. Grésillon, J-C. Rivoal, and A.C. Boccarda (Paris, France)
Imaging beyond the diffraction limit in terahertz domain
- 17.40-18.05 1.2.3 M.A. Noginov (Norfolk, USA)
Compensation of surface plasmon loss by optical gain in dielectric medium
- 18.05-18.30 1.2.4 E.A.L. Henn, K.M.F. Magalhães, G.B. Seco, L.G. Marcassa, and V.S. Bagnato (São Paulo, Brazil)
Cold atoms temperature measurement by transient absorption
- 18.30-18.50 1.2.5 A. Bebechibuli, S.T. Müller, R.F. Alves, D.V. Magalhães, and V.S. Bagnato (São Paulo, Brazil)
Operation and evaluation in the Brazilian Atomic Fountain primary time standard

Tuesday, July 25

Seminar 1.3

Chair: T. Feurer (Switzerland)

- 11.00-11.30 1.3.1 C. Manzoni, C. Vozzi, E. Benedetti, G. Sansone, S. Stagira, S. De Silvestri, M. Nisoli, G. Cerullo, and O. Svelto (Milano, Italy)
Absolute phase stabilization of few-optical-cycle pulses by an all-optical scheme
- 11.30-12.00 1.3.2 F.X. Kärtner (Cambridge, Massachusetts, USA)
Carrier-envelope phase dynamics and octave-spanning lasers
- 12.00-12.30 1.3.3 J. Biegert, P.R. Eckle, A. Guandalini, and U. Keller (Zürich, Switzerland)
CEO-controlled pulse generation and photoionization

12.30-13.00 1.3.4 S.T. Cundiff (Boulder, Colorado, USA)
Dynamics of mode-locked lasers and femtosecond combs

Wednesday, July 26

Seminar 1.4

Chair: Y. Ding (USA)

11.00-11.30 1.4.1 R. Sauerbrey (Dresden, Germany), H. Schwoerer, S. Pfotenhauer, O. Jäckel, K.-U. Amthor, B. Liesfeld, W. Ziegler (Jena, Germany), K.W.D. Ledingham (Jena, Germany, and Glasgow, UK), T. Esirkepov (Kyoto, Japan, and Dolgoprudnyi, Russia), D. Jaroszynski (Glasgow, UK), S. Karsch (Garching, Germany), B. Hidding, and G. Pretzler (Düsseldorf, Germany)

Laser accelerated monoenergetic electron and proton beams

11.30-12.00 1.4.2 V.I. Konov, V.V. Kononenko, T.V. Kononenko, S.M. Pimenov, V.P. Pashinin, and M.N. Sinyavsky (Moscow, Russia)
Ablation of materials by femto, pico, nano and microsecond laser pulses: a comparable study

12.00-12.25 1.4.3 M. Jelínek (Prague, Czech Republic)
Laser MAPLE for study of organic thin films

12.25-12.50 1.4.4 A. Semerok, P.-Y. Thro, F. Champonnois, P. Wodling, and D. Farcage (Saclay, France)
Laser systems for surface decontamination and cleaning

12.50-14.00 **Lunch**

Seminar 1.5

Chair: N. Rubtsova (Russia)

14.00-14.25 1.5.1 M.M. Fejer (Stanford, CA, USA)
Nonlinear optics in microstructured ferroelectrics and semiconductors

14.25-14.50 1.5.2 Y.J. Ding (Bethlehem, PA, USA)
Investigation of carrier dynamics from Type-II InAs/GaSb quantum wells to InAs quantum dots embedded in quantum well

14.50-15.10 1.5.3 S.V. Andreev, E.A. Vinogradov, V.O. Kompanets, Yu.E. Lozovik, Yu.A. Matveets, and S.V. Chekalin (Troitsk, Moscow region, Russia)
Ultrafast photoinduced response on semiconductor microcavity modes frequencies

15.10-15.25 1.5.4 A. Kir'yanov, Yu. Barmenkov (Leon, Mexico), A. Kurkov, and E. Dianov (Moscow, Russia)
Cooperative luminescence and absorption in Ytterbium-doped fibers as the appearance of the Ytterbium ion-pairs' effect

15.25-15.40 1.5.5 G.Yu. Nikolaeva, K.A. Prokhorov, Yu.V. Shemuratov, P.P. Pashinin, E.M. Antipov, V.A. Gerasin, and M.A. Guseva (Moscow, Russia)
Raman diagnostics of the structure of polymer blends and polymer-clay nanocomposites

15.40-15.55 1.5.6 A.M. Fedotov, N.B. Narozhny, A.N. Petrosyan (Moscow, Russia), and Yu.E. Lozovik (Troitsk, Moscow region, Russia)
Dynamical Casimir effect in a one-dimensional contracting cavity

- 15.55-16.15 1.5.7 Yu.E. Lozovik (Troitsk, Moscow region, Russia) and M. Willander (Goteborg, Sweden)
Coherent phases and phenomena in electron-hole systems in nanostructures
- 16.15-16.45 **Coffee break**
- Seminar 1.6**
Chairs: J.J. Carroll (USA) and A. Zadernovsky (Russia)
- 16.45-17.15 1.6.1 J.J. Carroll (Youngstown, Ohio, USA) and S.A. Karamian (Dubna, Russia)
Nuclear structure research and the search for a gamma-ray laser
- 17.15-17.45 1.6.2 H.R. Reiss (Berlin, Germany and Washington DC, USA)
Overview of strong-field accelerated nuclear beta decay
- 17.45-18.15 1.6.3 A.A. Zadernovsky (Moscow, Russia)
Gamma-ray laser with hidden inversion of nuclear state populations
- 18.15-18.45 1.6.4 S.A. Karamian (Dubna, Russia) and J.J. Carroll (Youngstown, Ohio, USA)
Prospects for Coulomb-excitation-driven nuclear radiation
-

Thursday, July 27

Seminar 1.7

Chair: F. Kärtner (USA)

- 11.00-11.30 1.7.1 T. Feurer and T. Hornung (Bern, Switzerland)
Multi-dimensional femtosecond pulse shaping
- 11.30-12.00 1.7.2 N. Wagner, A. Wüest, R. Tobey, M. Siemens, I. Christov, T. Popmintchev, X. Zhou, M.M. Murnane, and H.C. Kapteyn (Boulder, Colorado, USA)
Ultrafast coherent X-Ray spectroscopies of molecules and materials
- 12.00-12.25 1.7.3 R. Kienberger, M. Uiberacker, M. Schultze, A. Verhoeff, E. Goulielmakis, F. Krausz (Garching, Germany), and Th. Uphues (Bielefeld, Germany)
Single attosecond pulses and first applications
- 12.25-12.50 1.7.4 G. Sansone, E. Benedetti, F. Calegari, S. Stagira, C. Vozzi, S. De Silvestri, M. Nisoli (Milano, Italy), L. Poletto, and P. Villoresi (Padova, Italy)
Tunable isolated attosecond pulses

12.50-14.00 **Lunch**

Seminar 1.8

Chair: I. Yevseyev (Russia)

- 14.00-14.30 1.8.1 I. Sorokina (Vienna, Austria)
Cr²⁺- laser: a titanium sapphire of the infrared?
- 14.30-14.55 1.8.2 M.J. Thorpe, R.J. Jones, K.D. Moll, and J. Ye (Boulder, Colorado, USA)
Femtosecond enhancement cavities for extreme nonlinear optics and molecular spectroscopy
- 14.55-15.20 1.8.3 A. Amari, B. Julsgaard, M. Nilsson, and S. Kröll (Lund, Sweden)
Quantum state storage and reconstruction in solids
- 15.20-15.45 1.8.4 N.N. Rubtsova (Novosibirsk, Russia) and V.A. Reshetov (Togliatti, Russia)
Coherent control of optical transients: molecules, atoms, nanostructures

- 15.45-16.05 1.8.5 V.V. Samartsev, V.N. Lisin, A.M. Shegeda, and V.A. Zuikov (Kazan, Russia)
Weak magnetic field behaviour of the backward photon echo in LuLiF₄:Er³⁺ - crystal
- 16.05-16.15 1.8.6 V.V. Samartsev, V.S. Lobkov, K.M. Salikhov, G.M. Safiullin, and V.A. Zuikov (Kazan, Russia)
Femtosecond stimulated photon echo in the dye-doped polymer film at the room temperature: outlook on the high-temperature echo-processors' creation and the laser cooling via photon side-band
- 16.15-16.45 **Coffee break**
- Seminar 1.9**
Chair: M. Noginov (USA)
- 16.45-17.10 1.9.1 O. Smirnova, S. Patchkovskii (Ottawa, Canada), and M. Spanner (Toronto, Canada)
Direct XUV imaging of attosecond electron recollision
- 17.10-17.35 1.9.2 A. Gordon (Cambridge, MA, USA)
What determines the shape and magnitude of the high harmonic spectrum?
- 17.35-18.00 1.9.3 M. Ivanov (Ottawa, Canada), E.A. Shapiro (Vancouver, Canada), and I.A. Walmsley (Oxford, United Kingdom)
Fighting decoherence in a rotationally hot diatomic molecule
- 18.00-18.25 1.9.4 L.F. DiMauro (Columbus, Ohio, USA)
Strong field physics in a scaled interaction: a route to attoseconds
- 18.25-18.50 1.9.5 L. Wöste (Berlin, Germany)
The Teramobile project

Poster Session, July 25

- P1.1 J.F. Corney and P.D. Drummond (Brisbane, Australia)
Quantum noise simulations of polarisation squeezing in fibres
- P1.2 S.A. Karamian, S. Iliev, S.P. Tretyakova (Dubna, Russia), and J.J. Carroll (Youngstown, Ohio, USA)
To a possibility of the ^{178m2}Hf isomer alpha-decay
- P1.3 S.A. Kochubei, N.N. Rubtsova, V.N. Ishchenko, E.B. Khvorostov (Novosibirsk, Russia), V.A. Reshetov (Togliatti, Russia), and I.V. Yevseyev (Moscow, Russia)
Strong magnetic field effect on photon echo in ytterbium vapour
- P1.4 E.A. Sagitova, K.A. Prokhorov, G.Yu. Nikolaeva, D.N. Kozlov, M.A. Guseva, V.A. Gerasin, and E.M. Antipov (Moscow, Russia)
Determination of crystallinity of oriented polyethylene and polyethylene-clay nanocomposites by Raman spectroscopy
- P1.5 N. Noginova, R. Bah, R.R. Rakhimov, and C.E. Bonner (Norfolk, USA)
Effect of laser light illumination to spin states in colossal magnetoresistance materials
- P1.6 T. Sato, Y. Fujimoto, H. Yoshida, M. Nakatsuka (Osaka, Japan), T. Ueda, and A. Fujinoki (Koriyama, Japan)
Development of Nd doped silica glass for high- average- power laser
- P1.7 K. Sueda (Osaka, Japan) and T. Kobayashi (Fukui, Japan)
Development of high average power LD pumped Yb:YAG regenerative amplifier

P1.8

K. Sumimura, H. Yoshida, H. Okada, H. Fujita, and M. Nakatsuka (Osaka, Japan)

Mode-Locked Yb Fiber Laser with a Broad Tuning Range for Chirped Pulse Amplification System

Seminar 2 Strong-field phenomena

Monday, July 24

Seminar 2.1

Chair: M.V. Fedorov (Russia)

- 14.00–14.35 2.1.1 R.R. Freeman (Columbus, Ohio USA)
Unresolved issues surrounding the physics of ultra intense lasers striking solid surfaces
- 14.35-15.00 2.1.2 Ch.H. Keitel (Heidelberg, Germany)
Nuclear and high-energy processes in extremely strong laser pulses
- 15.00-15.25 2.1.3 N.M. Naumova (Palaiseau, France; Ann Arbor, MI US) J.A. Nees, I.V. Sokolov, E.P. Power, V.P. Yanovsky, A. Maksimchuk (Ann Arbor, MI US), and G.A. Mourou (Palaiseau, France; Ann Arbor, MI US)
Efficient attosecond phenomena in the relativistic lambda cubed regime
- 15.25-15.50 2.1.4 Yu.M. Mikhailova and V.T. Platonenko (Moscow, Russia)
Tight focusing effect on the generation of fast electrons and attosecond pulses in the few-cycle laser-foil interaction
- 15.50-16.15 2.1.5 V.S. Rastunkov and V.P. Krainov (Dolgoprudny, Moscow Region, Russia)
Mechanisms for electron acceleration in thin foils irradiated by a super-intense laser pulse
- 16.15-16.45 **Coffee break**

Seminar 2.2

Chair: H. Reiss (USA, Germany)

- 16.45-17.10 2.2.1 A. Di Piazza, K.Z. Hatsagortsyan, and C.H. Keitel (Heidelberg, Germany)
Nonlinear interaction of strong laser fields in vacuum
- 17.10-17.35 2.2.2 P. Krekora, K. Cooley, Q. Su, and R. Grobe (Normal, IL USA)
Creation dynamics of bound states in supercritical fields
- 17.35-18.00 2.2.3 A.M. Fedotov and N.B. Narozhny (Moscow, Russia)
Generation of harmonics by a focused laser beam in vacuum
- 18.00-18.25 2.2.4 M.V. Fedorov, M. A. Efremov, and P.A. Volkov (Moscow, Russia)
Strong-field pair production: a structure of wave packets and the electron-positron entanglement (correlations)
- 18.25-18.50 2.2.5 A.V. Glushkov (Odessa, Ukraine)
Non-linear features in the strong laser field-atom interaction: QED approach
-

Tuesday, July 25

Seminar 2.3

Chair: A.M. Popov (Russia)

- 14.00-14.30 2.3.1 F. Quere, C. Thauray, P. Monot, Ph. Martin (Gif-sur-Yvette, France), J-P. Geindre, P. Audebert (Paris, France), and R. Marjoribanks (Toronto, Canada)
High-order harmonics generation from overdense plasmas
- 14.30-14.55 2.3.2 S. Varró (Budapest, Hungary)
Reflection of a few-cycle laser pulse on a metal nano-layer: generation of phase dependent wake-fields

- 14.55-15.20 2.3.3 F. Pegoraro, F. Califano, and D. Del Sarto (Pisa, Italy)
Does the Weibel instability generate coherent magnetic fields in a laser produced plasma?
- 15.20-15.45 2.3.4 H.-J. Kull, T. Ristow (Aachen, Germany), G. Rascol, H. Bachau, and V.T. Tikhonchuk (Bordeaux, Talence, France)
Electron-ion collisions in a strong laser field
- 15.45-16.10 2.3.5 T. Baeva (Düsseldorf, Germany)
Relativistic Plasma Control
- 16.15-16.45 **Coffee break**
- Seminar 2.4**
Chair: W. Becker (Germany)
- 16.45-17.10 2.4.1 W. Sandner (Berlin, Germany)
TBA
- 17.10-17.35 2.4.2 M. Kundu and D. Bauer (Heidelberg, Germany)
Energy absorption in the short-pulse laser-cluster interaction
- 17.35-18.00 2.4.3 H.R. Reiss (Berlin, Germany; Washington, DC US)
Gauge matters in strong-field physics
- 18.00-18.25 2.4.4 R. Taïeb and A. Maquet (Paris, France)
Atoms in strong fields: IR versus X-ray lasers
- 18.25-18.50 2.4.5 M. Sahrai (Tabriz, Iran)
Atom localization via absorption spectrum
-

Wednesday, July 26

Seminar 2.5

Chair: A. Maquet (France)

- 11.00-11.25 2.5.1 S.L. Haan, A. Karim (Grand Rapids, MI USA), and J.H. Eberly (Rochester, NY USA)
Recollision, time delay, and double ionization studied with 3-D classical ensembles
- 11.25-11.50 2.5.2 Ph.J. Ho and J.H. Eberly (Rochester, NY USA)
Multi-electron correlation in intense-field triple ionization
- 11.50-12.15 2.5.3 A. Becker, S. Baier, C. Ruiz (Dresden, Germany), L. Plaja, and L. Roso (Salamanca, Spain)
Ab-initio simulation of two-electron dynamics in a few-cycle pulse
- 12.15-12.40 2.5.4 O. Smirnova (Ottawa, Canada), M. Spanner (Toronto, Canada), and M. Ivanov (Ottawa, Canada)
Coulomb and polarization effects in laser-assisted XUV ionization

Lunch

Seminar 2.6

Chair: D. Bauer (Germany)

- 14.00-14.25 2.6.1 O. Smirnova (Ottawa, Canada), M. Spanner (Toronto, Canada), and M. Ivanov (Ottawa, Canada)
To dress or not to dress: that's the S-matrix question
- 14.25-14.50 2.6.2 K.L. Ishikawa (Tokyo, Japan; Kawaguchi, Japan)
Attosecond double- and triple-slit experiment
- 14.50-15.15 2.6.3 M.V. Frolov (Voronezh, Russia), A.A. Khuskivadze[†] (Lincoln, Nebraska, USA), N.L. Manakov (Voronezh, Russia), and A.F. Starace (Lincoln, Nebraska, USA)
Quantum origin of plateau effects in the HHG and ATD spectra

- 15.15-15.40 2.6.4 K. Krajewska (Lincoln, Nebraska, USA; Warszawa, Poland),
I.I. Fabrikant, and A.F. Starace (Lincoln, Nebraska, USA)
*Threshold-related effects in the high-energy plateau in above-threshold
detachment*
- 15.40-16.05 2.6.5 M.V. Frolov and N.L. Manakov (Voronezh, Russia)
*Threshold-related enhancements of HHG and ATD spectra for negative
ions*
- 16.15-16.45 **Coffee break**
- Seminar 2.7**
Chair: J. Biegert (Switzerland)
- 16.45-17.10 2.7.1 D.B. Milošević (Sarajevo, Bosnia and Herzegovina; Berlin,
Germany), E. Hasović, A. Gazibegović-Busuladžić, M. Busuladžić,
A. Čerkić (Sarajevo, Bosnia and Herzegovina), and W. Becker (Berlin,
Germany)
*Simulation of the above-threshold ionization and detachment experiments
using the strong-field approximation*
- 17.10-17.35 2.7.2 C. Figueira de Morisson Faria (London, UK), P. Salieres, P. Villain
(Gif-sur-Yvette, France), and M. Lewenstein (Barcelona, Spain; Hannover,
Germany)
*Controlling high-harmonic generation and above-threshold ionization with
an attosecond-pulse train*
- 17.35-18.00 2.7.3 V.T. Platonenko and A.F. Sterjantov (Moscow, Russia)
*Attosecond atomic response to linearly polarized laser pulse by
semiclassical approach*
- 18.00-18.25 2.7.4 A.M. Popov, O.V. Tikhonova, and E.A. Volkova (Moscow, Russia)
*Generation of XUV attosecond pulses in the process of atomic ionization by
few-cycle laser radiation*
- 18.25-18.50 2.7.5 I.P. Prokopovich (Minsk, Belarus)
*Attosecond pulses with high peak intensity in singly ionized Kr: generation,
propagation, restrictions*

Thursday, July 27

Seminar 2.8

Chair: M. Ivanov (Canada)

- 11.00-11.25 2.8.1 Q. Lin (Berlin, Germany; Hangzhou, China), S. Li (Hangzhou,
China), and W. Becker (Berlin, Germany)
High-order harmonic generation in a tightly focused laser beam
- 11.25-11.50 2.8.2 E. Saczuk and J.Z. Kaminski (Warszawa, Poland)
High-order harmonic generation from solid surfaces in intense laser fields
- 11.50-12.15 2.8.3 J. Peatross (Heidelberg, Germany), M. Adams, N. Brimhall,
G. Giraud, J. Painter, N. Powers, and M. Ware (Provo, UT USA)
Laser filamentation in high-order harmonic generation
- 12.15-12.40 2.8.4 J. Dharmadhikari, K. Alti, A.K. Dharmadhikari, F.A. Rajgara, and
D. Mathur (Mumbai, India)
Control of multiple filaments in condensed media
- 12.45-14.00 **Lunch**

Seminar 2.9

Chair: W. Sandner (Germany)

- 14.00-14.25 2.9.1 P.R. Eckle, Ph. Schlup, J. Biegert (Zurich, Switzerland), M.P. Smolarski, A. Staudte, M. Schöffler, O. Jagutzki, R. Dörner (Frankfurt am Main, Germany), and U. Keller (Zurich, Switzerland)
Spatial mapping of sub-cycle dynamics
- 14.25-14.50 2.9.2 S. Bivona, R. Burlon, and C. Leone (Palermo, Italy)
Controlling laser assisted radiative recombination with few-cycle laser pulses
- 14.50-15.15 2.9.3 C.P. Hauri, M. Merano, A. Trisorio, and R.B. Lopez-Martens (Palaiseau, France)
High-energy down-chirped few-cycle pulse generation in filaments
- 15.15-15.45 2.9.4 I. Ben-Itzhak, P.Q. Wang, A.M. Saylor, B. Gaire, N.G. Johnson, M. Leonard, E. Parke, K.D. Carnes, V. Roudnev, and B.D. Esry (Manhattan, Kansas, USA)
Interaction of ultrashort intense laser pulses with molecular ion beams
- 15.45-16.10 2.9.5 S. Saugout, E. Charron, A. Suzor-Weiner, and C. Cornaggia (Orsay, France)
Coulomb explosion of H₂ using sub-10 fs intense laser pulses
- 16.15-16.45 **Coffee break**

Seminar 2.10

Chair: A. Becker (Germany)

- 16.45-17.10 2.10.1 A.M. Popov, O.V. Tikhonova, and E.A. Volkova (Moscow, Russia)
Electron-diffraction imaging of nuclear dynamics in molecules
- 17.10-17.35 2.10.2 M.Yu. Emelin, I.A. Gonoskov, M.Yu. Ryabikin, and A.M. Sergeev (Nizhny Novgorod, Russia)
Dynamic imaging of light molecules: effect of nuclear motion during probe pulse
- 17.35-18.00 2.10.3 Th. Ergler, A. Rudenko, B. Feuerstein, K. Zrost, C.D. Schröter, R. Moshhammer, and J. Ullrich (Heidelberg, Germany)
Time-resolved imaging of H₂⁺ (D₂⁺) nuclear wave packet dynamics: a 'molecular movie' in real time
- 18.00-18.25 2.10.4 I.Sh. Averbukh, Sh. Fleischer, and Y. Prior (Rehovot, Israel)
Isotope-selective strong-field control of rotational dynamics
- 18.25-18.50 2.10.5 M.S. Molodensky and O.V. Tikhonova (Moscow, Russia)
Rotational dynamics of molecular ensemble in a strong laser field
-

Friday, July 28

Seminar 2.11

Chair: I. Averbukh (Israel)

- 11.00-11.25 2.11.1 A. Rudenko, Th. Ergler, B. Feuerstein, K. Zrost, C.D. Schröter, R. Moshhammer, and J. Ullrich (Heidelberg, Germany)
Excitation of ground-state vibrational wave packets in neutral D₂ molecules via selective depletion in intense laser pulses
- 11.25-11.50 2.11.2 M.A. Efremov (Moscow, Russia; Ulm, Germany) and M.V. Fedorov (Moscow, Russia)
A new method of creating narrow atomic wave packets: scattering by a chirped standing light wave

- 11.50-12.15 2.11.3 P.A. Volkov, M.A. Efremov, and M.V. Fedorov (Moscow, Russia)
A Rydberg atom in a resonant microwave field: excitation of higher-angular-momentum states and modulation of the electron angular and radial motion
- 12.15-12.40 2.11.4 V. Strelkov (Moscow, Russia; Dresden, Germany), U. Saalmann, A. Becker, and J.-M. Rost (Dresden, Germany)
High-order harmonic generation from expanding atomic clusters
- 12.45-14.00 **Lunch**
- Seminar 2.12**
Chair: V.P. Krainov (Russia)
- 14.00-14.25 2.12.1 M. Krishnamurthy (Heidelberg, Germany)
Nanoclusters and microdroplets in intense laser fields
- 14.25-14.50 2.12.2 J. Liu, Ch. Wang, B. Liu, B. Shuai, W. Wang, Y. Cai, H. Li, G. Ni, R. Li, and Zh. Xu (Shanghai, People's Republic of China)
Time-resolved investigation of cluster explosion dynamics by linearly-chirped spectral scattering and absorption
- 14.50-15.15 2.12.3 M.B. Smirnov (Moscow, Russia) and W. Becker (Berlin, Germany)
X-ray emission by clusters in a strong electromagnetic field
- 15.15-15.40 2.12.4 L. Arndt and H.-J. Kull (Aachen, Germany)
Electron and ion energy spectra from laser-irradiated clusters
- 15.40-16.15 2.12.5 S.P. Andreev and T.V. Pavlova (Moscow, Russia)
Electron states on short-range potential in two dimensional structure in magnetic field
- 16.15-16.45 **Coffee break**
- Seminar 2.13**
Chair: D. Mathur (India)
- 16.45-17.10 2.13.1 E.Yu. Echkina, I.N. Inovenkov (Moscow, Russia), J.K. Koga, Y. Fukuda (Kyoto, Japan), A.Ya. Faenov (Mendeleev, Moscow region, Russia), and S.V. Bulanov (Kyoto, Japan; Moscow, Russia)
Scattering versus self-focusing of the high power laser pulse during its interaction with the multi-cluster targets
- 17.10-17.35 2.13.2 V.P. Krainov and A.V. Sofronov (Dolgoprudny, Moscow Region, Russia)
Recombination processes in large atomic clusters irradiated by a super-intense femtosecond laser pulse
- 17.35-18.00 2.13.3 X. Liu (College Station, TX USA), C. Figueira de Morisson Faria (London, UK), W. Becker (Berlin, Germany), and P.B. Corkum (Ottawa, Ontario, Canada)
Attosecond electron thermalization by laser-driven electron recollision in atoms
- 18.00-18.25 2.13.4 A.A. Bobrov, E.A. Manykin, B.B. Zelener, and B.V. Zelener (Moscow, Russia)
Distribution function and electron state density in nonequilibrium plasma created by dye laser
- 18.25-18.50 2.13.5 S.A. Ivanenko, E.A. Manykin, B.B. Zelener, and B.V. Zelener (Moscow, Russia)
Recombination properties of Rydberg nonequilibrium plasma created by dye laser

Poster Session, July 24-25

- P2.1. A.M. Fedotov (Moscow, Russia), S.S. Bulanov (Ann Arbor, MI USA; Moscow, Russia), and F. Pegoraro (Pisa, Italy)
Damping of a super strong electromagnetic wave due to electron-positron pair production
- P2.2. A.V. Gets and V.P. Krainov (Dolgoprudny, Moscow Region, Russia)
The ionization potentials of atomic ions in laser-irradiated Ar, Kr and Xe clusters
- P2.3. I.A. Gonoskov, V.A. Mironov, and G.A. Vugalter (Nizhny Novgorod, Russia)
Ionization in a quantized electromagnetic field: effect of photon statistics
- P2.4. A. Gazibegović-Busuladžić (Sarajevo, Bosnia and Herzegovina), D.B. Milošević (Sarajevo, Bosnia and Herzegovina; Berlin, Germany), and W. Becker (Berlin, Germany)
Above-threshold detachment from F^- and Br^- : a simulation of the experiment
- P2.5. E. Hasović, D.B. Milošević (Sarajevo, Bosnia and Herzegovina), G.G. Paulus (College Station, TX USA), and W. Becker (Berlin, Germany)
Above-threshold ionization by few-cycle laser pulses: methods for the carrier-envelope phase control
- P2.6. K.B. Oganesyan, K.G. Petrosyan, and A.E. Allahverdyan (Yerevan, Armenia)
Laser cooling of electrons and X-ray generation: a relativistic quantum heat engine
- P2.7. M.L. Petrosyan, L.A. Gabrielyan, Yu.R. Nazaryan, G.Kh. Tovmasyan, and K.B. Oganesyan (Yerevan, Armenia)
Ferromagnetic undulator with constant magnet
- P2.8. I.P. Prokopovich, V.N. Belyi, N.S. Kazak (Minsk, Belarus), and M. Kroening (Saarbrücken, Germany)
Generation and full transmission of high intense supercontinuum up to EUV in Kr^+
- P2.9. F.A. Rajgara and D. Mathur (Mumbai, India)
Molecular dynamics using femtosecond and sub-femtosecond strong fields and using broadband light
- P2.10. E.M. Sarkisyan, V.A. Ispiryan, K.B. Oganesyan (Yerevan, Armenia), Zh.S. Gevorgian (Ashtarak, Armenia; Yerevan, Armenia), V.V. Harutyunyan, V.A. Saakyan, S.G. Gevorgyan (Yerevan, Armenia), J. Verhoeven (Amsterdam, The Netherlands), M.V. Fedorov, A.I. Artemiev, and S.M. Fedorov (Moscow, Russia)
Resonant diffusive radiation in random multilayered systems
- P2.11. C. Figueira de Morisson Faria and A. Fring (London, UK)
Time evolution of non-Hermitian Hamiltonian systems
- P2.12. A.V. Glushkov (Odessa, Ukraine)
Discharge of metastable nuclei during negative muon capture in short laser pulse and search of the possible high power source of monochromatic gamma radiation

- P2.13. S.V. Malinovskaya (Odessa, Ukraine)
Graser-electron nuclear spectroscopy: New effects in spectra of molecular systems
- P2.14. V.I. Usachenko and P.E. Pyak (Tashkent, Uzbekistan)
Orientation dependence of ionization rate in laser-irradiated homonuclear diatomics: the velocity gauge of molecular strong-field approximation
- P2.15. P.J. Ho (Rochester, NY USA; Berlin, Germany), X. Liu (College Station, TX USA), and W. Becker (Berlin, Germany)
Classical nonsequential double ionization (NSDI) in two dimensions
- P2.16. S. Varró (Budapest, Hungary)
Scattering of a few-cycle femtosecond laser pulse on a plasma layer: the role of the carrier-envelope phase difference at relativistic intensities
- P2.17. A.V. Koval' and V.M. Koval' (Tashkent, Uzbekistan)
The maximal kinetic energies of ATI photoelectrons in a strong two color laser fields of the first and N-th harmonics ($N=2-100$), (classic and quantum-mechanical models)
- P2.18. V.I. Usachenko and P.E. Pyak (Tashkent, Uzbekistan)
Orientation dependence of ionization rate in laser-irradiated homonuclear diatomics: the velocity gauge of molecular strong-field approximation

Seminar 3 Biophotonics

Monday, July 24

Seminar 3.1

Chairs: J. Lademann (Germany) and V. Bagnato (Brazil)

- 14.00-14.20 3.1.1 E. Sobol, V. Bagratashvili, A. Baskov, I. Borshchenko, O. Zakharkina, Yu. Ovchinnikov, A. Shekhter, V. Svistushkin, and N. Vorobieva (Troitsk, Russia)
Laser-induced reshaping and regeneration of cartilage: interdisciplinary research and medical applications
- 14.20-14.40 3.1.2 V. Wiegner, S. Zoppel, and E. Wintner (Vienna, Austria)
Ultra-short pulse laser osteotomy
- 14.40-15.00 3.1.3 V. Bagratashvili (Troitsk, Russia)
Biocompatibility of 3-D polylactide scaffolds fabricated by surface selective laser sintering
- 15.00-15.20 3.1.4 H. Jelínková, J. Pašta, P. Koranda, M. Němec, and J. Šulc (Prague, Czech Republic)
Near- and mid-infrared laser radiation influence on eye tissue
- 15.20-15.40 3.1.5 A.V. Korobtsov, S.P. Kotova, N.N. Losevsky, A.M. Maiorova, E.V. Razueva, V.G. Volostnikov (Samara, Russia), X. Xun, and R.W. Cohn (Louisville, USA)
Spiral type beams based laser manipulator
- 15.40-16.00 3.1.6 J. Dharmadhikari (Mumbai, India)
Real time monitoring of UV-induced stress using optical trap
- 16.00-16.20 3.1.7 E.A. Manykin and V.B. Oshurko (Moscow, Russia)
Water ordering under laser radiation
- 16.20-16.45 **Coffee Break**

Seminar 3.2

Chairs: D. Chorvat (Slovakia) and J. Fujimoto (USA)

- 16.45-17.10 3.2.1 R.S. Cavalcante (San Carlos, Brazil), J. Ferreira, S. Zucoloto (Ribeirão Preto, Brazil), V.S. Bangato, and J.R. Perussi (San Carlos, Brazil)
In vivo and in vitro relations for the photodynamic therapy action of different photosensitizers
- 17.10-17.30 3.2.2 E. Debeve, B. Pegaz, J.-P. Ballini, and H. van den Bergh (Lausanne, Switzerland)
The effect of PDT on chick's chorioallantoic membrane vasculature permeability: Effects of an anti-aggregating agent
- 17.30-17.50 3.2.3 M.F.M. Costa (Braga, Portugal), M.C.L. Pacheco, and E.R. Gallegos (St. Tomas, Mexico)
Microtopographic inspection for skin cancer' early detection
- 17.50-18.10 3.2.4 V.B. Loschenov, A.V. Ryabova, and A.A. Stratonnikov (Moscow, Russia)
Combined spectroscopic method for effectiveness photosensitizes analysis in biological objects

- 18.10-18.30 3.2.5 E.Ph. Stranadko (Moscow, Russia), W. Rauschnig (Edinburg, UK-Scotland), M.V. Riabov (Moscow, Russia), V. Albrecht, and N.E. Nifantiev, (Jena, Germany)
Optimization of PDT parameters for skin cancer treatment
- 18.30-18.50 3.2.6 E.A. Genina, A.N. Bashkatov, and V.V. Tuchin (Saratov, Russia)
Interaction of photosensitive dye with skin
-

Tuesday, July 25

Seminar 3.3

Chairs: T. Milner (USA) and H. Jelinkova (Czech Republic)

- 11.00-11.25 3.3.1 R.P. Salathé, G. Delacretaz, F. Merenda, J. Rohner, and J.-M. Fournier (Lausanne, Switzerland)
From surgery to tweezers - some laser developments in biophotonics
- 11.25-11.45 3.3.2 J.G. Fujimoto, D. Adler, A. Aguirre, Y. Chen, I. Gorczynska, S.W. Huang, R. Huber, J. Liu, V.J. Srinivasan (Cambridge, USA), M. Wojtkowski, and A. Kowalczyk (Torun, Poland)
High speed and ultrahigh resolution optical coherence tomography
- 11.45-12.05 3.3.3 I.V. Turchin, V.I. Plehanov, A.G. Orlova, I.V. Balalaeva, E.A. Sergeeva, V.A. Kamensky (Nizhny Novgorod, Russia), and A.P. Savitsky (Moscow, Russia)
Fluorescence diffusion tomography for detection of tumors labeled with fluorescent agents
- 12.05-12.25 3.3.4 T.E. Milner, J. Oh, J. Kim, E. Kim, K. Sokolov, J. Aaron, S. Emelianov (Austin, USA), M.D. Feldman, J. Mancuso, M. Cilingiroglu, and P. Sanghi (San Antonio, USA)
Detection of metallic nanoparticles in tissues
- 12.25-12.45 3.3.5 O.V. Kravtzenyuk (Heraklion, Greece) and V.V. Lyubimov (St. Petersburg, Russia)
Fast reconstruction algorithm for fluorescent tomography: applications in small animal imaging
- 12.45-14.00 **Lunch**

Seminar 3.4

Chairs: G. Giubileo (Italy) and R.P. Salathé (Switzerland)

- 14.00-14.20 3.4.1 M.E. Darwin, K. Hesterberg, I. Gersonde, H. Albrecht, W. Sterry, and J. Lademann (Berlin, Germany)
Resonance Raman spectroscopic method for the fast determination of the carotenoids lutein/zeaxanthin and beta-carotene in the yolk of eggs
- 14.20-14.40 3.4.2 D. Chorvat, Jr., J. Kirchnerova, A. Mateasik (Bratislava, Slovakia), and A. Chorvatova (Montreal, Canada)
Spectrally and time-resolved study of endogenous flavin fluorescence induced in cardiac myocytes by a blue/violet picosecond diode lasers
- 14.40-15.00 3.4.3 N. Smith, S. Iwanaga, K. Fujita, and S. Kawata (Osaka, Japan)
Laser induced Ca²⁺ elevation and oscillation in cardiac cells
- 15.00-15.20 3.4.4 G.H. Rutherford, S. Campbell, A. O'Connell, S. Menon, Q. Su, and R. Grobe (Normal, USA)
Light scattering regimes along the optical axis in bio-optical media
- 15.20-15.40 3.4.5 J. Tothova, B. Brutovsky, and V. Lisy (Kosice, Slovakia)
Draining and concentration effects in the dynamic light scattering from nonentangled polymers in solution

- 15.40-16.00 3.4.6 M.E. Darvin, I. Gersonde, H. Albrecht, W. Sterry, and J. Lademann (Berlin, Germany)
Resonance Raman spectroscopy for the in vivo evaluation of beta-carotene and lycopene carotenoid antioxidant substance degradation subsequent to infrared irradiation of the human skin. Formation of free radicals
- 16.00-16.20 3.4.7 J. Lademann, N. Otberg, H. Richter, L. Meyer, H. Audring, A. Teichmann (Berlin, Germany), S. Thomas (Melbourne, Australia), A. Knüttel (Mannheim, Germany), W. Sterry (Berlin, Germany), and S. Koch (Bad Saarow, Germany)
Application of optical non-invasive methods in skin physiology - a comparison of laser scanning microscopy and optical coherent tomography with histological analysis
- 16.20-16.45 **Coffee Break**
- Seminar 3.5**
Chairs: S. Gonchukov (Russia) and H. van den Bergh (Switzerland)
- 16.45-17.10 3.5.1 V.V. Tuchin, A.N. Bashkatov, E.A. Genina, A.A. GavriloVA, A.B. Pravdin, E.V. Migacheva (Saratov, Russia), I. Yaroslavsky, and G. Altshuler (Burlington, USA)
Optical clearing of human skin
- 17.10-17.30 3.5.2 A. Andreev, Yu. Bobilev, I. Kompanets, E. Pozhidaev, V. Shoshin, A. Alyushin, M. Alyushin, and S. Gonchukov (Moscow, Russia)
Three-dimensional display with a volumetric screen for medicine and biophotonics
- 17.30-17.50 3.5.3 M. Meinke, M. Schröder, R. Schütz, U. Netz, J. Helfmann, A. Pries, and G. Müller (Berlin, Germany)
Frequency weighted laser-Doppler blood flow measurements in skin
- 17.50-18.10 3.5.4 A. Puiu, G. Giubileo, G. Addolorato, L. Revelli, G. Gasbarrini, C. Carrozza, A. D'Amore, and C.P. Lombardi (Roma, Italy)
Stress monitoring in scuba-divers during a 10 days Guinness immersion
- 18.10-18.30 3.5.5 U.J. Netz (Berlin, Germany), A.K. Scheel (Göttingen, Germany), A.H. Heilscher (New York, USA), and J. Beuthan (Berlin, Germany)
Signal-to-noise analysis for propagation of laser radiation through a tissue-like medium by diffuse photon-density waves
- 18.30-18.50 3.5.6 A.N. Bashkatov, E.A. Genina, E.V. Koblova, V.V. Tuchin, and T.G. Kamenskikh (Saratov, Russia)
Estimation of melanin content in iris of human eye: prognosis for glaucoma diagnostics

Poster Session, July 25

Chair: A.N. Bashkatov

- P3.1 A.N. Bashkatov, E.A. Genina, V.V. Tuchin (Saratov, Russia), G.B. Altshuler, and I.V. Yaroslavsky (Burlington, USA)
Monte Carlo study of skin optical clearing to enhance light penetration in the tissue: implications for photodynamic therapy of acne vulgaris
- P3.2 D. Chorvat, Jr., I. Bugar (Bratislava, Slovakia), A. Chorvatova (Montreal, Canada), and D. Chorvat (Bratislava, Slovakia)
Fluorescence kinetics of FAD and FAD:NADH lipoamide dehydrogenase in water

- P3.3 D.B. Kultchitskaya and N.E. Fedorova (Moscow, Russia)
Blood microcirculation study in patients with spondylarthritis
- P3.4 V.N. Khristoforov, A.Ya. Grabovshiner, and I.P. Liubimova (Moscow, Russia)
Hardware methods of quantum-resonance physiotherapy
- P3.5 P.F.C. Menezes, C. Bernal, V.S. Bagnato, H. Imasato, and J.R. Perussi (San Carlos, Brazil)
Photodynamic activity of some dyes
- P3.6 P.F.C. Menezes, J. Ferreira, C. Grecco, V.S. Bagnato, and J.R. Perussi (San Carlos, Brazil)
Correlation of cytotoxicity and depth of necrosis of the photoproducts of photogem
- P3.7 O. Minet, U. Zabarylo, and J. Beuthan (Berlin, Germany)
Laser based multispectral diagnosis of rheumatoid arthritis
- P3.8 A. Myakov, P. Agrba, and V. Kamensky (Nizhny Novgorod, Russia)
Polarized reflectance spectroscopy
- P3.9 A.P. Papaev, G.V. Simonenko, and V.V. Tuchin (Saratov, Russia)
Optical anisotropy studies of biological tissues
- P3.10 T. Rieger, A. Teichmann, H. Richter, W. Sterry, and J. Lademann (Berlin, Germany)
Application of in vivo laser scanning microscopy for evaluation of barrier creams

Seminar 4
Physics of Lasers
Monday, July 24

Seminar 4.1

Chairs: H.G. Limberger (Switzerland) and E.M. Dianov (Russia)

- 14.00-14.30 4.1.1 T. Südmeyer, S.V. Marchese, M. Golling, R. Grange, and U. Keller (Zürich, Switzerland)
Pulse energy scaling of passively modelocked lasers towards the 10- μ J regime
- 14.30-15.00 4.1.2 C.N. Borca, F. Gardillou, Y.E. Romanyuk, C. Hibert, R.-P. Salathé, and M. Pollnau (Lausanne, Switzerland)
Optical rib waveguides in Yb-doped KY(WO₄)₂ epilayers
- 15.00-15.25 4.1.3 C. Kraenkel, R. Peters, K. Petermann, and G. Huber (Hamburg, Germany)
High-Power Yb:LSB Thin-Disk Laser with Broad Tunability
- 15.25-15.50 4.1.4 V.B. Tsvetkov, G.A. Bufetova, D.A. Nikolaev, V.F. Seregin, I.A. Shcherbakov, M.Yu. Gusev, I.A. Ivanov, and N.S. Neustroev (Moscow, Russia)
Garnet laser films grown by liquid epitaxy method
- 15.50-16.15 4.1.5 Ch. Ban, H.G. Limberger (Lausanne, Switzerland), V.V. Dvoyrin, and V.M. Mashinsky (Moscow, Russia)
High photosensitivity of Ga-codoped chromium fibers to 193 nm Excimer laser irradiation
- 16.15-16.45 **Coffee break**

Seminar 4.2

Chairs: H. Jelínková (Czech Republic) and E. Sorokin (Austria)

- 16.45-17.10 4.2.1 F. Gardillou, Ya.E. Romanyuk, M. Pavius, C.N. Borca, R.-P. Salathé, and M. Pollnau (Lausanne, Switzerland)
Focused-ion-beam nano-structured rib waveguides in KY(WO₄)₂ for laser applications
- 17.10-17.35 4.2.2 J. Kováč, J. Kováč, Jr. (Bratislava, Slovakia), D. Pudiš (Žilina, Slovakia), A. Šatka, F. Uhrek (Bratislava, Slovakia), V. Gottschalch, B. Rheinländer, H. Herrmberger, J. Zajadacz, K. Zimmer, and A. Schindler (Leipzig, Germany)
Properties of InGaAs/GaAs QW Coupled Edge and Surface Emitting Tilted Cavity Lasers
- 17.35-18.00 4.2.3 G.A. Bufetova, V.V. Kashin, D.A. Nikolaev, Yu.M. Papin, S.Ya. Rusanov, V.F. Seregin, I.A. Shcherbakov, V.B. Tsvetkov, and A.A. Yakovlev (Moscow, Russia)
Zonal doped crystal fibers for temperature measurements
- 18.00-18.25 4.2.4 F. Cornacchia, D. Parisi, A. Toncelli, and M. Tonelli (Pisa, Italy)
2- μ m Tm³⁺-doped fluoride lasers
- 18.25-18.50 4.2.5 V.A. Akulov, D.M. Afanasiev, S.A. Babin, D.V. Churkin, S.I. Kablukov, M.A. Rybakov, and A.A. Vlasov (Novosibirsk, Russia)
Frequency tuning and doubling in Yb-doped fiber lasers

Tuesday, July 25

Seminar 4.3

Chairs: M. Pollnau (Switzerland) and J. Kováč (Slovakia)

- 11.00-11.30 4.3.1 H. Kiriya (Kyoto, Japan)
Development of high-contrast, high-peak-power, Ti:sapphire/OPCPA laser system
- 11.30-11.55 4.3.2 K. Luenstedt, N. Pavel, K. Petermann, and G. Huber (Hamburg, Germany)
Continuous-wave dual-wavelength emission at 912 nm and 1063 nm in a thin-disk Nd:GdVO₄ crystal
- 11.55-12.20 4.3.3 N.N. Il'ichev, P.V. Shapkin, L.A. Kulevsky, E.S. Gulyamova, and A.S. Nasibov (Moscow, Russia)
Nonlinear transmission of ZnSe crystal doped with Fe²⁺ at wavelength 2.92 μm
- 12.20-12.45 4.3.4 H. Kofler, J. Tauer, and E. Wintner (Vienna, Austria)
A Novel Solid-State Laser for Engine Ignition
- 12.45-14.00 **Lunch**

Seminar 4.4

Chairs: H. Kiriya (Japan) and V.B. Tsvetkov (Russia)

- 14.00-14.30 4.4.1 E. Sorokin (Vienna, Austria)
Ultrabroadband coherent laser sources for spectroscopy and metrology in the infrared
- 14.30-15.00 4.4.2 H. Jelínková, P. Koranda (Prague, Czech Republic), M. Doroshenko, T.T. Basiev (Moscow, Russia), J. Šulc, M. Němec, P. Černý (Prague, Czech Republic), V.K. Komar, and M.B. Kosmyna (Kharkov, Ukraine)
ZnSe:Cr²⁺ laser pumped by 1.66 μm or 1.97 μm radiations
- 15.00-15.25 4.4.3 A.S. Kurkov, V.M. Paramonov, V.A. Isaev, N.A. Kharchenko, and E.M. Dianov (Moscow, Russia)
Phase locking of a 4-core Yb-doped fiber laser using the multimode Bragg reflector
- 15.25-15.50 4.4.4 A.V. Kir'yanov and Yu.O. Barmenkov (Leon, Mexico)
Self-Q-switching operation of Ytterbium-doped fiber laser in all-fiber configuration
- 15.50-16.15 4.4.5 R. Peters, Ch. Kraenkel, K. Petermann, and G. Huber (Hamburg, Germany)
Spectroscopic Investigation and Laser Operation of Yb³⁺ in the Promising Thin-Disk Laser Material NaGd(WO₄)₂
- 16.15-16.45 **Coffee break**

Seminar 4.5

Chairs: A.S. Kurkov (Russia) and A.V. Kir'yanov (Mexico)

- 16.45-17.15 4.5.1 I. Razdobreev, L. Bigot, V. Pureur, G. Bouwmans, and M. Douay (Lille, France)
Broadband and efficient bismuth fiber laser around 1.2 μm
- 17.15-17.40 4.5.2 S.P. Kotova and A.K. Chernyshov (Samara, Russia)
Spectrum-tunable liquid crystal polarization isolator for the diode lasers
- 17.40-18.05 4.5.3 S. Behrouzinia, A.R. Namdar, M. Zand, and R. Barry (Tehran, Iran)
Effect of the magnetic pulse compression circuit on operation of a halide laser

- 18.05-18.30 4.5.4 V.V. Kireev, V.B. Morozov, A.N. Olenin, V.G. Tunkin, and D.V. Yakovlev (Moscow, Russia)
Thermal regime optimization of high-peak-power diode-pumped picosecond Nd:YAG laser
-

Poster session, July 25

Chair: V.M. Yermachenko (Russia)

- P4.1. A.A. Kovalyov, O.P. Pchelyakov, V.V. Preobrazhenskii, M.A. Putyato, and N.N. Rubtsova (Novosibirsk, Russia)
New technique of phase control for laser mirrors based on semiconductor heterostructures
- P4.2. V.M. Yermachenko, V.N. Petrovskiy, and E.D. Protsenko (Moscow, Russia)
A diode-pumped ND:YAG laser with linearly and orthogonally polarized components of the radiation at the wavelength 0,532 nm.
- P4.3. V.V. Tumorin and N.N. Il'ichev (Moscow, Russia)
Measurement of the phase component of a gain grating in flash-lamp pumped YAP:Nd crystal

Seminar 5
Nonlinear Optics and Spectroscopy

Wednesday, July 26

Seminar 5.1

Chair: V.A. Makarov (Russia)

- 11.00-11.25 5.1.1 S.L. Chin, F. Theberge, H. Xu, Q. Luo, W. Liu, S.A. Hosseini, M. Sharifi, J-F. Daigle (Quebec, Canada), N. Akozbek (Huntsville, USA), A. Becker (Dresden, Germany), G. Roy, and P. Mathieu (Quebec, Canada)
New applications of intense femtosecond laser filamentation: efficient generation of tunable few cycle pulses and remote sensing of chem-bio agents
- 11.25-11.50 5.1.2 O.G. Kosareva, N.A. Panov, V.P. Kandidov (Moscow, Russia), W. Liu, F. Theberge, and S.L. Chin (Quebec, Canada)
Optimizing transport of femtosecond laser pulses in air
- 11.50-12.15 5.1.3 L. Bonacina, P. Béjot, J. Extermann, J.-P. Wolf (Geneva, Switzerland), R. Ackermann, N. Lascoux, E. Salmon, J. Kasparian (Villeurbanne Cedex, France), N. Blanchot, O. Bonville, A. Boscheron, P. Canal, M. Castaldi, O. Hartmann, C. Lepage, L. Marmande, E. Mazataud, G. Mennerat, L. Patissou (Le Barp, France), D. Raffestin, S. Champeaux, L. Bergé, and C. Guet (Bruyeres le Chatel, France)
25 J - 45 TW Laser Based White-Light LIDAR
- 12.15-12.40 5.1.4 V.E. Lobanov and A.P. Sukhorukov (Moscow, Russia)
Elastic collisions and scattering of optical beams in quadratic media
- 12.40-14.00 **Lunch**

Seminar 5.2

Chair: S.L. Chin (Canada)

- 14.00-14.25 5.2.1 A. Becker, E. Arevalo (Dresden, Germany), W. Liu, J.-F. Gravel, F. Theberge, and S.L. Chin (Quebec, Canada)
The role of the energy reservoir during ultrashort intense laser filamentation
- 14.25-14.50 5.2.2 S. Tzortzakis, D.G. Papazoglou, and I. Zergioti (Heraklion, Greece)
Self-trapped ultraviolet fs laser filaments in fused silica leading to permanent structural modifications: the role of the plasma strings
- 14.50-15.15 5.2.3 R. Nuter, S. Skupin, and L. Berge (Bruyeres le Chatel, France)
Optical femtosecond filaments in condensed media
- 15.15-15.40 5.2.4 K. Jamshidi-Ghaleh and D. Abdolahpour (Tabriz, Iran)
Laser fluence and shot number dependence of laser-induced optical properties modification of transparent materials
- 15.40-16.05 5.2.5 F. Biancalana (Cork, Ireland)
Intervalence band solitons in semiconductor quantum wells
- 16.15-16.45 **Coffee break**

Seminar 5.3

Chair: C. Flytzanis (France) and V.B. Morozov (Russia)

- 16.45-17.10 5.3.1 I. Perezhogin, S.A. Shlenov, and V.A. Makarov (Moscow, Russia)
Formation of inhomogeneously polarized temporal stable structures of light field and polarization separation under light pulse self-action

- 17.10-17.35 5.3.2 P.M. Mikheev, V.M. Gordienko, and V.S. Syrtsov (Moscow, Russia)
Nonlinear Rotation of Polarization of Femtosecond Laser Radiation with intensity up to 10^{13} W/cm² in BaF₂ crystal
- 17.35-18.00 5.3.3 H.S.S. Hung, N.A. Naz, J. Prawiharjo, D.C. Hanna, and D.P. Shepherd (Southampton, UK)
Parametric transfer in a synchronously pumped optical parametric oscillator
- 18.00-18.25 5.3.4 S.M. Shandarov, N.I. Burimov, M.A. Dubtsov, V.G. Sibagatulina, D.S. Baklanov (Tomsk, Russia), Yu.F. Kargin, A.V. Egorysheva, and V.V. Volkov (Moscow, Russia)
Polarization effects at two-beam interaction on reflection holographic gratings in sillenite crystals
- 18.25-18.50 5.3.5 T.G. Yukina, N.V. Znamenskiy, Yu.V. Malyukin, P.N. Zhmurin, and Yu.N. Velikhov (Moscow, Russia)
Concentration quenching anomalies of activated Y₂SiO₅:Pr³⁺ nanocrystal luminescence

Thursday, July 27

Seminar 5.4

Chair: A. Becker (Germany)

- 11.00-11.25 5.4.1 A. Tarasevitch, K. Lobov, C. Dietrich, D. van der Brugge, and D. von der Linde (Duisburg, Germany)
High harmonic generation: transfer to relativistic regime
- 11.25-11.50 5.4.2 C. Corsi, A. Pirri, E. Sali, A. Tortora, and M. Bellini (Florence, Italy)
Direct interferometric measurement of the atomic dipole phase in high-order harmonic generation
- 11.50-12.15 5.4.3 S. Cavalieri, L. Fini, E. Sali (Sesto Fiorentino, Italy), and R. Buffa (Siena, Italy)
Enhanced harmonic generation efficiency using a Fresnel-zone-plate
- 12.15-12.30 5.4.4 A.C. Busacca, R.L. Oliveri, M. Cherchi, G. Ferrante, I. Dentici, S. Riva-Sanseverino (Palermo, Italy), A.C. Cino, A. Parisi (Monreale, Italy), and G. Assanto (Roma, Italy)
Ultraviolet quasi-phase-matched second harmonic generation in surface periodically poled Lithium Niobate optical waveguides
- 12.30-12.45 5.4.5 A.V. Andreev, O.A. Shoutova, and S.Yu. Stremoukhov (Moscow, Russia)
Ionization of single hydrogen-like atom in near-atomic strength laser field
- 12.45-14.00 **Lunch**

Seminar 5.5

Chair: A. Tarasevitch (Germany)

- 14.00-14.25 5.5.1 Ch. Heinrich, S. Bernet, and M. Ritsch-Marte (Innsbruck, Austria)
Non-scanning CARS-microscopy
- 14.25-14.50 5.5.2 K. Misawa, K. Horikoshi, and R. Lang (Koganei, Japan)
Sensitive femtosecond rapid-scanning wave-packet spectrometer
- 14.50-15.15 5.5.3 L.V. Dao, D. McDonald, T.M. Do, M. Lowe, and P. Hannaford (Hawthorn, Australia)
Spectrally resolved 2-colour 3-pulse photon echoes: study of dynamics of complex molecules

- 15.15-15.40 5.5.4 Yu.E. Lozovik, V.A. Nadtochenko, O.M. Sarkisov, and A.S. Sobennikov (Troitsk, Russia)
Femtosecond time-resolved study of carrier dynamics in single-wall carbon nanotubes
- 15.40-16.05 5.5.5 V. Arakcheev, V. Kireev, V. Morozov, A. Olenin, V. Tunkin, A. Valeev, and D. Yakovlev (Moscow, Russia)
Collisionally induced rotational energy transfer in CO₂ Fermi dyad Q-branches
- 16.15-16.45 **Coffee break**
- Seminar 5.6**
Chair: M. Ritsch-Marte (Austria)
- 16.45-17.10 5.6.1 V. Tognetti, M.N. Miranda, and H.M. Crespo (Porto, Portugal)
Few-cycle pulse compression in photonic crystal fibers without dispersion compensation
- 17.10-17.35 5.6.2 N.M. Litchinitser (Michigan, USA), I.R. Gabitov (Tuscon, USA), and A.I. Maimistov (Moscow, Russia)
Nonlinear transmission in double resonant thin films
- 17.35-18.00 5.6.3 Y.Y. Zhu, S.N. Zhu, and N.B. Ming (Nanjing, China)
Microstructural ferroelectric domain engineering
- 18.00-18.25 5.6.4 S.V. Zaboltnov, L.A. Golovan, I.A. Ostapenko, A.A. Ezhov, M.A. Lastovkina, Yu.V. Ryabchikov, V.Yu. Timoshenko, and P.K. Kashkarov (Moscow, Russia)
Third harmonic generation and optical response of silicon surfaces structured by femtosecond laser pulses

Poster Session, July 25

- P5.1 S.P. Kotova and A.K. Chernyshov (Samara, Russia)
Spectrum-tunable liquid crystal polarization isolator for the diode lasers
- P5.2 S.P. Kotova (Samara, Russia)
Effective producing of axially-symmetric light beams under reflection from beam interferometer
- P5.3 G.G. Grigoryan, Yu.V. Orlov, A.Yu. Shashkov, T.G. Yukina, and N.V. Znamenskiy (Moscow, Russia)
Superradiant emission of LaF₃: Pr³⁺ in resonator
- P5.4 R. Buffa (Siena, Italy), S. Cavalieri, L. Fini, E. Sali, and M.V. Tognetti (Sesto Fiorentino, Italy)
Temporal compression of nanosecond laser pulses using coherent control
- P5.5 R.V. Volkov, D.V. Khakhulin, and A.B. Savel'ev (Moscow, Russia)
Efficient Broadband Parametric Amplification of Femtosecond Radiation with Narrowband Pump
- P5.6 O.G. Kosareva, I.N. Murtazin, N.A. Panov, A.B. Savel'ev, V.P. Kandidov (Moscow, Russia), and S.L. Chin (Quebec, Canada)
Pulse shortening due to filamentation in transparent medium
- P5.7 K. Shandarova and V. Shandarov (Tomsk, Russia)
Incoherent formation of bright gap solitons within photorefractive photonic lattices in lithium niobate

- P5.8 A.V. Glushkov, E. Gurnitskaya, and N. Loboda (Odessa, Ukraine)
Diagnostics of elementary processes in a collisionally pumped plasma and search of the optimal plasma parameters for X-ray lasing
- P5.9 N. Loboda and A.V. Glushkov (Odessa, Ukraine)
Numerical modeling a populations differences dynamics

Seminar 6
Physics of Cold Trapped Atoms

Monday, July 24

Seminar 6.1

Chairs: P. Meystre (USA) and M. Tosi (Italy)

- 14.00-14.30 6.1.1 L.P. Pitaevskii (Trento, Italy)
Non-equilibrium Casimir-Lifshitz thermal forces and their measurement in cold atom experiments
- 14.30-15.00 6.1.2 N. Davidson (Rehovot, Israel)
Quantum dynamics of ultra cold atoms in atom-optics billiards
- 15.00-15.30 6.1.3 P. Hannaford, S. Whitlock, R. Anderson, B.V. Hall, M. Singh, T. Roach, J.Y. Wang, R.J. McLean, A.M. Akulshin, and A.I. Sidorov (Melbourne, Australia)
Permanent magnetic microstructures for atom chips
- 15.30-15.55 6.1.4 N.P. Proukakis (Newcastle, United Kingdom), J. Schmiedmayer (Heidelberg, Germany), and H.T.C. Stoof (Utrecht, The Netherlands)
Quasi-condensate growth on an atom chip
- 15.55-16.15 6.1.5 J. Fortàgh (Tübingen, Germany)
Matterwave interferometer on a chip
- 16.15-16.45 **Coffee Break**

Seminar 6.2

Chairs: L.P. Pitaevskii (Italy) and E. Zaremba (Canada)

- 16.45-17.10 6.2.1 V.I. Yukalov and E.P. Yukalova (Dubna, Russia)
Representative ensembles for systems with Bose-Einstein condensate
- 17.10-17.30 6.2.2 A. Streltsov (Heidelberg, Germany)
General variational many-body theory with complete self-consistency for ultra-cold bosons: impact of self-consistency
- 17.30-17.50 6.2.3 J.F. Corney, T.G. Vaughan, and P.D. Drummond (Brisbane, Australia)
Quantum fluctuations in evaporatively cooled condensates
- 17.50-18.10 6.2.4 O.E. Müstecaplıoğlu and D. Tarhan (Istanbul, Turkey)
Enhancing capacity of coherent optical information storage and transfer in a Bose-Einstein condensate
- 18.10-18.30 6.2.5 M. Brewczyk, K. Gawryluk (Białystok, Poland), and M. Gajda (Warsaw, Poland)
Einstein-de Haas effect for a Rb atom condensate
- 18.30-18.50 6.2.6 A.S. Bradley, M.K. Olsen (Brisbane, Australia), S.A. Haine, and J.J. Hope (Canberra, Australia)
Homodyne measurements of an atom laser beam
-

Tuesday, July 25

Seminar 6.3

Chairs: A. Fetter (USA) and H. Walther (Germany)

- 11.00-11.30 6.3.1 Y. Castin (Paris, France)
The unitary three-body problem in a trap
- 11.30-12.00 6.3.2 B. Svistunov, E. Burovski, N. Prokofev, and M. Troyer (Amherst, USA)
Critical temperature and thermodynamics of attractive fermions at unitarity

- 12.00-12.25 6.3.3 R. Onofrio (Hanover, USA)
Ultracold Fermi-Bose mixtures in light-assisted magnetic traps
- 12.25-12.45 6.3.4 A. Perali, P. Pieri, and G.C. Strinati (Camerino, Italy)
Pseudogap opening in radio-frequency spectroscopy with trapped Fermi gases
- 12.45-14.00 **Lunch**
- Seminar 6.4**
Chairs: Y. Castin (France) and B. Svistunov (USA)
- 14.00-14.30 6.4.1 P. Meystre and T. Miyakawa (Tucson, USA)
Dissociation dynamics of Bose-Fermi mixtures in optical lattices
- 14.30-15.00 6.4.2 A. Bulgac (Seattle, USA)
Superfluidity in symmetric and asymmetric Fermi systems in the unitary regime
- 15.00-15.30 6.4.3 M. Tosi (Pisa, Italy)
Phase behaviors of strongly correlated Fermi gases trapped in one-dimensional lattices
- 15.30-15.55 6.4.4 F. Chevy, L. Tarruell, M. Teichmann, J. McKeever, and C. Salomon (Paris, France)
Strongly interacting Fermi gases
- 15.55-16.15 6.4.5 K.J. Challis, R.J. Ballagh, and C.W. Gardiner (Dunedin, New Zealand)
Bragg scattering of Cooper pairs in an ultra-cold Fermi gas
- 16.15-16.45 **Coffee Break**
- Seminar 6.5**
Chairs: N. Davidson (Israel) and R. Onofrio (USA)
- 16.45 - 17.10 6.5.1 L. Salasnich (Milano, Italy)
Mean-field vs Monte-Carlo equation of state for the expansion of a Fermi vapor in the BCS-BEC crossover
- 17.10 - 17.30 6.5.2 F. Minardi (Sesto Fiorentino, Italy)
Experiments with ultracold degenerate bosons and fermions
- 17.30 - 17.50 6.5.3 M. Guilleumas (Barcelona, Spain)
Mean-field study of Bose-Fermi mixtures
- 17.50 - 18.10 6.5.4 X. Leyronas (Paris, France), I.V. Brodsky, M.Yu Kagan, A.V. Klapptsov (Moscow, Russia), and R. Combescot (Paris, France)
Exact diagrammatic approach for dimer-dimer scattering and bound states of three and four resonantly interacting particles
- 18.10 - 18.30 6.5.5 R. Gati, B. Hemmerling, T. Ottenstein, J. Appmeier, A. Weller, J. Esteve, and M.K. Oberthaler (Heidelberg, Germany)
Noise thermometry with two coupled Bose-Einstein condensates
- 18.30 - 18.50 6.5.6 V. Konotop (Lisbon, Portugal), V.A. Brazhnyi, and V.M. Perez-Garcia (Ciudad Real, Spain)
Defect modes in arrays of Bose-Einstein condensates with a localized impurity

Wednesday, July 26

Seminar 6.6

Chairs: A. Bulgac (USA) and P. Hannaford (Australia)

- 11.00 - 11.30 6.6.1 M. Leduc (Paris, France)
Dark resonances between atom and exotic molecules in an ultracold $^4\text{He}^$ ultracold cloud*
- 11.30 - 12.00 6.6.2 W.C. Stwalley (Storrs, USA)
Photoassociative formation of ultracold molecules from ultracold trapped K and Rb atoms
- 12.00 - 12.25 6.6.3 M. Weitz (Tübingen, Germany)
Fourier synthesis of optical potentials for atomic quantum gases
- 12.25 - 12.45 6.6.4 K. Kheruntsyan (Brisbane, Australia)
Quantum atom optics with fermions from molecular dissociation
- 12.45 - 14.00 **Lunch**

Seminar 6.7

Chairs: M. Leduc (France) and W.C. Stwalley (USA)

- 14.00 - 14.30 6.7.1 G. Raithel (Ann Arbor, USA)
The trapping and interactions of cold Rydberg atoms
- 14.30 - 15.00 6.7.2 V.I. Balykin (Troitsk, Russia)
Atom trapping with optical nanofields
- 15.00 - 15.30 6.7.3 V.S. Bagnato, V.A. Nascimento, L.L. Caliri, A.I. De Oliveira, and L.G. Marcassa (São Carlos, Brazil)
Interaction mechanisms in a sample of ultracold Rydberg atoms
- 15.30 - 15.55 6.7.4 H. Ritsch and T. Salzburger (Innsbruck, Austria)
Lasing and cooling in a hot cavity
- 15.55 - 16.15 6.7.5 C. Henkel, A. Kurcz (Potsdam, Germany), and A. Negretti (Aarhus, Denmark)
Bose-Einstein condensates in time-dependent quasi-1D traps: interferometry and beyond
- 16.15 - 16.45 **Coffee Break**

Seminar 6.8

Chairs: V.S. Bagnato (Brazil) and M. Weitz (Germany)

- 16.45 - 17.10 6.8.1 V.A. Yurovsky (Tel Aviv, Israel)
Reactions and inelastic collisions of quasi-one-dimensional atoms and molecules
- 17.10 - 17.30 6.8.2 C. Weiss, A. Eckardt, T. Jinasundera, and M. Holthaus (Oldenburg, Germany)
Manipulating Bose-Einstein condensates with oscillating forces
- 17.30 - 17.50 6.8.3 N. Piovella, M.M. Cola, and L. Volpe (Milano, Italy)
Self-focusing forces in the collective light scattering from a Bose-Einstein condensate
- 17.50 - 18.10 6.8.4 O. Zobay and G.M. Nikolopoulos (Darmstadt, Germany)
Dynamics of matter-wave and optical fields in superradiant scattering from Bose-Einstein condensates
- 18.10 - 18.30 6.8.5 P. Bouyer, D. Clément, A.F. Varón, P. Lugan, J.A. Retter, L. Sanchez-Palencia, and A. Aspect (Orsay, France)
Experimental study of the transport of coherent interacting matter-waves in a 1D random potential induced by laser speckle

18.30 - 18.50 6.8.6 C. Ospelkaus, S. Ospelkaus, O. Wille, M. Succo, P. Ernst, K. Sengstock, and K. Bongs (Hamburg, Germany)
Localization of bosonic atoms by fermionic impurities in a 3d optical lattice

Thursday, July 27

Seminar 6.9

Chairs: V. Balykin (Russia) and G. Raithel (USA)

11.00 - 11.30 6.9.1 A. Fetter (Stanford, USA)
Vortex dynamics for a dilute Bose-Einstein condensate in a half-space

11.30 - 12.00 6.9.2 M. Wadati (Tokyo, Japan)
Dark Solitons in the $F=1$ Bose-Einstein condensates

12.00 - 12.25 6.9.3 M.T. Batchelor, X.W. Guan (Canberra, Australia), and N. Oelkers (Brisbane, Australia)
The 1D interacting anyon gas

12.25 - 12.45 6.9.4 A. Aftalion (Paris, France)
Vortex patterns in a rotating BEC

12.45 - 14.00 **Lunch**

Seminar 6.10

Chairs: M.T. Batchelor (Australia) and M. Wadati (Japan)

14.00 - 14.30 6.10.1 G.V. Shlyapnikov (Paris, France)
Supersolid states in dipolar gases

14.30 - 15.00 6.10.2 W. Zwerger (Garching, Germany)
Quantum dots with cold atoms

15.00 - 15.30 6.10.3 F. Dalfovo (Povo, Italy), M. Modugno (Povo, Italy and Sesto Fiorentino, Italy), and C. Tozzo (Pisa, Italy)
Detecting phonons and persistent currents in toroidal Bose-Einstein condensates

15.30 - 15.55 6.10.4 D. Blume (Pullman, USA), D.C.E. Bortolotti (Boulder, USA and Sesto Fiorentino, Italy), S. Ronen, and J.L. Bohn (Boulder, USA)
Benchmark calculations for dipolar Bose gases: Comparison of Monte Carlo and mean-field energies

15.55 - 16.15 6.10.5 H.P. Buchler (Innsbruck, Austria)
Formation of crystal in quantum degenerate polar molecules

16.15 - 16.45 **Coffee Break**

Seminar 6.11

Chairs: F. Dalfovo (Italy) and W. Zwerger (Germany)

16.45 - 17.10 6.11.1 D. Hutchinson (Dunedin, New Zealand)
Finite-temperature, time-dependent techniques for ultra-cold gases

17.10 - 17.30 6.11.2 D. Petrov (Paris, France)
Crystal of weakly bound dimers

17.30 - 17.50 6.11.3 S.A. Gardiner, A.D. Martin, and C.S. Adams (Durham, United Kingdom)
Regular and chaotic soliton dynamics in a degenerate Bose gas

17.50 - 18.10 6.11.4 T.J. Alexander, E.A. Ostrovskaya, and Yu. Kivshar (Canberra, Australia)
Dots to anti-dots, changing matter wave vortex properties with an optical lattice

- 18.10 - 18.30 6.11.5 Y. Kawaguchi, H. Saito (Tokyo, Japan), and M. Ueda (Tokyo, Japan and Saitama, Japan)
Spin dynamics and stable spin texture in spinor dipolar Bose-Einstein condensates
- 18.30 - 18.50 6.11.6 G. Watanabe (Copenhagen, Denmark)
Vortex-antivortex oscillation and tunneling in Bose-Einstein condensates
-

Friday, July 28

Seminar 6.12

Chairs: M. Girardeau (Tucson, USA) and A. Hemmerich (Germany)

- 11.00 - 11.30 6.12.1 M.O. Scully (College Station and Princeton, USA)
From Bose and Einstein to Bogoliubov and beyond: a rich tradition of optical and statistical physics
- 11.30 - 12.00 6.12.2 P. Gould, M.J. Wright, J. Pechkis, and J. Carini (Storrs, USA)
Control of ultracold collisions with frequency-chirped light
- 12.00 - 12.25 6.12.3 Biao Wu, Zhaoxim Liang, and Xi Dong (Beijing, China)
Sound speed of Bose-Einstein condensates in optical lattices
- 12.25 - 12.45 6.12.4 D. van Oosten, Th. Best, T. Rom, U. Schneider, and I. Bloch (Mainz, Germany)
Towards degenerate K-Rb mixtures in optical lattices

12.45 - 14.00

Lunch

Seminar 6.13

Chairs: P. Gould (USA) and G. Shlyapnikov (France)

- 14.00 - 14.30 6.13.1 H. Walther (Garching, Germany)
Single photon sources with trapped ions
- 14.30 - 15.00 6.13.2 A. Hemmerich, J. Klinner, M. Lindholdt, and B. Nagorny (Hamburg, Germany)
Normal mode splitting and mechanical effects of an optical lattice in a ring cavity
- 15.00 - 15.30 6.13.3 K. Ziegler (Augsburg, Germany)
Mixtures of atoms in an optical lattice
- 15.30 - 15.55 6.13.4 P.B. Blakie (Dunedin, New Zealand)
Thermodynamics of quantum gases in optical lattices
- 15.55 - 16.15 6.13.5 A. Rey (Harvard, USA), I.I. Satija, and C.W. Clark (Gaithersburg, USA)
Hanbury Brown-Twiss interferometry in superlattices

16.15 - 16.45

Coffee Break

Seminar 6.14

Chairs: D. Hutchinson (New Zealand) and K. Ziegler (Germany)

- 16.45 - 17.10 6.14.1 Yu.E. Lozovik (Moscow, Russia), O.L. Berman, and D.W. Snoke (Pittsburgh, USA)
Bose-Einstein condensation and superfluidity of polaritons in a two-dimensional trap
- 17.10 - 17.30 6.14.2 V. Penna, P. Buonsante (Torino, Italy), and A. Vezzani (Parma, Italy)
A coherent-state variational approach to attractive ultracold bosons in a ring optical lattice
- 17.30 - 17.50 6.14.3 O.E. Alon (Heidelberg, Germany)
Attractive and repulsive condensates on a ring

- 17.50 - 18.10 6.14.4 K. Eckert, M. Lewenstein, A. Sanpera, and E. Polzik (Barcelona, Spain)
Light-matter interface for ultracold spinor gases
- 18.10 - 18.30 6.14.5 M. Okumura, M. Mine, T. Sunaha, and Y. Yamanaka (Tokyo, Japan)
Quantum field theoretical description of unstable behavior of Bose-Einstein condensate with highly quantized vortex in harmonic potential
- 18.30 - 18.50 6.14.6 K. Iigaya, S. Konabe (Tokyo, Japan), I. Danshita (Tokyo, Japan and Gaithersburg, USA), and T. Nikuni (Tokyo, Japan)
Instability of Bose-Einstein condensates moving in optical lattices
-

Poster Session, July 25

Chair: V.I. Yukalov

- P6.1 V.S. Bagnato, E.R.F. Ramos, and L. Sanz (São Carlos, Brazil)
Interference during excitation of coherent modes in a Bose-Einstein condensate
- P6.2 E. Demler (Cambridge, USA)
Measuring correlation functions in interacting systems of cold atoms
- P6.3 V.L. Derbov, V.V. Serov, L.A. Melnikov, and M.V. Ryabinina (Saratov, Russia)
Laser-induced and spontaneous radiative recombination of cold antihydrogen: the effects of strong magnetic field and sub-femtosecond pulses
- P6.4 A. Griesmaier, J. Stuhler, T. Koch, S. Götz, M. Fattori, and T. Pfau (Stuttgart, Germany)
Ultra-cold chromium: dipolar effects in a quantum gas
- P6.5 K. Härkönen, O. Kärki, and K.-A. Suominen (Turku, Finland)
Tailoring of the populations of vibrational states in a double-well potential
- P6.6 A.P. Itin (Tokyo, Japan and Moscow, Russia), T. Morishita, A. Satoh (Tokyo, Japan), O.I. Tolstikhin (Moscow, Russia), and S. Watanabe (Tokyo, Japan)
Vortex creation during magnetic trap manipulations of spinor Bose-Einstein condensates
- P6.7 S. Komineas (Cambridge, United Kingdom)
Single vortex states and virial theorems in a confined Bose-Einstein condensate
- P6.8 A. Kuklov (Staten Island, USA)
Non-S-wave Bose-Einstein condensates induced by Feshbach resonances at finite angular momenta
- P6.9 M. Machida (Tokyo, Japan), T. Koyama (Kanagawa, Japan), and Y. Ohashi (Saitama, Japan)
Vortex structure and dynamics in atomic Fermi gases; A numerical systematic study for a singly-quantized vortex
- P6.10 B.A. Malomed and A. Gubeskys (Tel Aviv, Israel)
Spontaneous symmetry breaking between parallel tunnel-coupled Bose-Einstein condensates in an optical lattice

- P6.11 B.A. Malomed, I.M. Merhasin (Tel Aviv, Israel), and Y.B. Band (Beer Sheva, Israel)
Partially incoherent gap solitons in Bose-Einstein condensates
- P6.12 A. Okulov (Moscow, Russia)
Quantum billiards with nonlinear walls
- P6.13 A.S. Peletminskii, S.V. Peletminskii, and Yu.V. Slyusarenko (Kharkiv, Ukraine)
On theory of Bose-Einstein condensation of spin-S atoms in a magnetic field
- P6.14 J.M. Rost, C. Ates, T. Pattard (Dresden, Germany), and T. Pohl (Cambridge, USA)
Anti-blockade in ultracold Rydberg excitation
- P6.15 M. Ryabinina and L. Melnikov (Saratov, Russia)
Coherent effects in laser-induced free-free and free-bound transitions in cold hydrogen/antihydrogen atom under the action of ultra-short strong-field laser pulse
- P6.16 H. Sakaguchi and T. Higashiuchi (Fukuoka, Japan)
Vortex interaction and a two-dimensional dark soliton
- P6.17 Yu.V. Slyusarenko and A.G. Sotnikov (Kharkiv, Ukraine)
On response of a system in BEC state to the perturbation by the external electromagnetic field
- P6.18 A. Sotnikov and Yu.V. Slyusarenko (Kharkov, Ukraine)
The Bose-condensation dependence on the inner atomic structure in the ideal gases of alkali atoms
- P6.19 A. Smerzi (Los Alamos, USA)
Interferometry at the Heisenberg limit
- P6.20 E.D. Trifonov (Saint-Peterburg, Russia) and Yu.A. Avetisyan (Saratov, Russia)
On the theory of superradiant scattering from Bose-Einstein condensate of dilute gas
- P6.21 M. Trippenbach, J. Chwedeńczuk, P. Ziń, and K. Rzazewski (Warsaw, Poland)
Single quantum realization of a collision of two Bose-Einstein condensates
- P6.22 M. Salerno (Salerno, Italy)
Matter-wave solitons in radially periodic potentials
- P6.23 A. Perali and A. Tartari (Camerino, Italy)
BCS-BEC crossover in two-band superconductors: a mean field analysis

Seminar 7
Quantum Information and Quantum Computation

Tuesday, July 25

Seminar 7.1

Chair: Leong Chuan Kwek (Singapore)

- 11.00-11.25 7.1.1 J.P. Dowling (Baton rouge, USA)
Linear optical quantum information processing, metrology and imaging
- 11.30-11.50 7.1.2 V. Ahufinger, M. Pons, C. Wunderlich, M. Lewenstein, and
A. Sanpera (Bellaterra, Spain)
Distributed quantum information: trapped ions as robust neural networks
- 11.55-12.15 7.1.3 G.S. Agarwal (Stillwater, USA), T. Bastin (Liège, Belgium), and
J. von Zanthier (Erlangen, Germany)
Decoherence of an Entangled Atomic Pair
- 12.20-12.40 7.1.4 F. Ciccarello, M. Palma, M. Zarcone, Y. Omar, and V.R. Vieira
(Palermo, Italy)
Entanglement Controlled Single-Electron Transmittivity

12.40-12.45

Lunch

Seminar 7.2

Chair: Nicolas Gisin (Switzerland)

- 14.00-14.30 7.2.1 H.-A. Bachor (Canberra, Australia)
Quantum Imaging: Experiments and future ideas
- 14.35-14.55 7.2.2 A. Lvovsky (Calgary, Canada), W. Wasilewski, P. Wasylczyk,
P. Kolenderski, K. Banaszek, and C. Radzewicz (Torun, Poland)
Characteristic squeezing modes in optical parametric amplification
- 15.00-15.20 7.2.3 A. Lvovsky, J. Appel, E. Figueroa, G. Guenter, and F. Vewinger
(Calgary, Canada)
*Adiabatic transfer of quantum optical information by means of
electromagnetically-induced transparency*
- 15.25-15.45 7.2.4 Xin Liu (Tianjin, P.R. China), Xiong-Jun Liu, L.C. Kwek, and
C.H. Oh (Singapore, Singapore)
*Electromagnetically Induced Transparency: Applications to Quantum
Information Processing and Creation of Spin Currents*
- 15.50-16.10 7.2.5 M. Genovese and N. Antonietti (Turin, Italy)
*Atmospheric effects on a quantum optical channel: toward earth-satellite
communications*

16.15-16.45

Coffee break

Seminar 7.3

Chair: Marco Genovese (Italy)

- 16.45- 17.05 7.3.1 L.C. Kwek (Singapore, Singapore)
The Hybrid Quantum Computer
- 17.10-17.30 7.3.2 K. Nemoto (Tokyo, Japan)
Qubus computation and its applications
- 17.35-17.55 7.3.3 T.F. Havel, P. Cappellaro, J.S. Hodges, and D.G. Cory (Cambridge,
USA)
Control of Qubits Encoded in Decoherence-Free Subspaces
- 18.00-18.20 7.3.4 A. Tomita (Tsukuba, Japan)
Sagnac interferometers in quantum information technology

- 18.25-18.45 7.3.5 B. Julsgaard, L. Rippe, M. Nilsson, A. Walther, S. Kroll (Lund, Sweden), J. Wesenberg, and K. Molmer (Aarhus, Denmark)
Developing solid state quantum computer hardware in inorganic crystals
- 18.50-19.10 7.3.6 M. Paris (Milan, Italy)
Cloning and telecloning in the presence of noise
-

Wednesday, July 26

Seminar 7.4

Chair: Hans-A. Bachor (Australia)

- 11.00 - 11.25 7.4.1 G. Leuchs, J. Heersink, U.L. Andersen (Erlangen, Germany), V. Josse (Orsay, France), J.F. Corney, and P.D. Drummond (Brisbane, Australia)
Efficient polarization squeezing of ultra short pulses in optical fibers - quantum dynamical simulations versus experiment
- 11.30-11.50 7.4.2 Q.J. Fiurasek, R. Filip (Olomouc, Czech Republic), P. Marek, (Belfast, UK), and R. Schnabel (Hannover, Germany)
- 11.55-12.10 7.4.3. V. Delaubert, N. Treps (Paris, France), M. Lassen (Lyngby, Denmark), C.C. Harb, P.K. Lam, N. Treps, and H-A. Bachor (Canberra, Australia)
Generation of continuous variable quantum correlations in the transverse plane
- 12.15-12.45 7.4.4 M. Stobinska (Warsaw, Poland), T.C. Ralph (St Lucia, Australia), T. Symul, N.B. Grosse, and P.K. Lam (Canberra, Australia)
From side-band squeezing to photon anti-bunching

12.45-14.00

Lunch

Seminar 7.5

Chair: Giacomo D'Ariano (Italy)

- 14.00-14.25 7.5.1 V. Scarani, A. Acin, N. Brunner, N. Gisin, L. Masanes, and S. Pino (Geneva, Switzerland)
Towards device-independent proofs for the security of cryptography
- 14.30-14.50 7.5.2 A. Sen De, U. Sen, M. Lewenstein (Barcelona, Spain), B. Gromek (Lodz, Poland), and D. Bruss (Düsseldorf, Germany)
Classical Capacity of Quantum Channels of Massive Particles: Bosons vs Fermions
- 14.55-15.15 7.5.3 S.N. Molotkov (Chernogolovka, Russia)
Quantum sampling theorem (Kotel'nikov theorem).
- 15.20-15.45 7.5.4 O. Hirota and K. Kurosawa (Machida-City, Japan)
Security of quantum stream cipher by Yuen 2000 protocol
- 15.50-16.15 7.5.5 C. Macciavello, F. Buscemi, G. Chiribella, G.M. D'Ariano, and P. Perinotti (Pavia, Italy)
Superbroadcasting of mixed states

16.15-16.45

Coffee break

Seminar 7.6

Chair: Gerd Leuchs (Germany)

- 16.45- 17.10 7.6.1 G.M. D'Ariano, R. Demkowicz-Dobrzanski, P. Perinotti, and M.F. Sacchi (Pavia, Italy)
The Quantum Cocktail Party

- 17.15-17.35 7.6.2 M. Navascues, S. Pironio, and A. Acin (Barcelona, Spain)
Detecting the quantum origin of correlations
- 17.40-18.00 7.6.3 F. Benatti and R. Floreanini (Trieste, Italy)
Quantum dynamical semigroups and entanglement generation
- 18.05-18.20 7.6.4 A. Carollo (Innsbruck, Austria)
Geometric phase induced by a cyclically evolving squeezed vacuum reservoir
- 18.25-18.40 7.6.5 E. Charron (Paris, France), M.A. Cirone, A. Negretti (Potsdam, Germany), J. Schmiedmayer (Heidelberg, Germany), and T. Calarco (Cambridge, USA)
Theoretical analysis of the implementation of a quantum phase gate with neutral atoms on atom chips
- 18.45-19.05 7.6.6 M. Arndt, M. Berninger, N.G.L. Hackermuller, G. Kiesewetter, M. Marksteiner, E. Reiger A. Stefanov, and H. Ulbricht (Wien, Austria)
New molecular beam techniques and applications for molecule interferometry

Thursday, July 27

Seminar 7.7

Chair: Francesco De Martini (Italy)

- 11.00 - 11.25 7.7.1 G. Bjork, C. Kothe, and S. Samuelsson (Kista, Sweden)
Local uncertainty relations, covariance, and entanglement
- 11.30-11.45 7.7.2 M. Bellini, A. Zavatta, M. D'Angelo, and V. Parigi (Florence, Italy)
Tomographic characterization and Bell's inequality test for remotely-prepared, single-photon, time-encoded, ebits
- 11.50-12.05 7.7.3 L. Krivitsky, G. Brida, M. Genovese (Turin, Italy), and M. Chekhova (Moscow, Russia)
Recent researches at INRIM on polarisation entanglement transmission
- 12.10-12.25 7.7.4 N.N. Rubtsova, S.A. Kochubei, V.N. Ishchenko, E.B. Khvorostov (Novosibirsk, Russia), V.A. Reshetov (Togliatti, Russia), and I.V. Yevseyev (Moscow, Russia)
Photon echo in magnetic field: new possibilities for data storage and processing
- 12.30 - 12.45 7.7.5 T. Honjo, H. Takesue (Atsugi-shi, Japan), and K. Inoue (Osaka, Japan)
Differential-phase quantum key distribution experiment using a series of quantum entangled photon pairs

12.45-14.00

Lunch

Seminar 7.8

Chair: Dagmar Bruss (Germany)

- 14.00-14.25 7.8.1 F. De Martini (Roma, Italy)
High gain quantum injected parametric amplification: non local amplified EPR, schrodinger cat state and phase-covariant cloning
- 14.30-14.50 7.8.2 U.L. Andersen, M. Sabuncu, G. Leuchs (Erlangen, Germany), V. Josse (Orsay, France), and N.J. Cerf (Brussels, Belgium)
Optical Amplification at the Quantum Limit
- 14.55-15.15 7.8.3 Bao-sen Shi (Hefei, P.R. China) and A. Tomita (Tsukuba, Japan)
Four photons interfering but showing the two-photon interference behavior

- 15.20-15.30 7.8.4 A. Soujaeff, S. Takeuchi, K. Sasaki, T. Hasegawa, and M. Matsui (Sapporo, Japan)
Characterization of 1550nm heralded single photon source
- 15.35-15.55 7.8.5 H.-W. Lee (Daejeon, Korea)
Quantum Teleportation with Coherent State Qubits
- 16.00 - 16.15 7.8.6 R. Demkowicz-Dobrzanski (Warszawa, Poland), M. Lewenstein, A. Sen De, U. Sen (Hannover, Germany), and D. Bruss (Düsseldorf, Germany)
Local cloning of entangled states: its application in quantum cryptography
- 16.15-16.45 **Coffee break**
- Seminar 7.9**
Chair: Gunnar Bjork (Sweden)
- 16.45-17.10 7.9.1 D. Bruss, P. Skwara, and H. Kampermann (Düsseldorf, Germany)
Entanglement witnesses and the loophole problem
- 17.15-17.30 7.9.2 M. Hayashi, Y. Tsuda, K. Matsumoto, A. Tomita, B.S. Shi, and Y.K. Jiang (Tokyo, Japan)
Testing for Maximally Entangled State (Theory and Experiment)
- 17.35-17.55 7.9.3 S. Takeuchi, R. Okamoto, and K. Sasaki (Sapporo, Japan)
Tailoring two photon interference with phase dispersion
- 18.00-18.20 7.9.4 B. Oztop, A.A. Klyachko, and A.S. Shumovsky (Ankara, Turkey)
Entanglement of qutrits
- 18.25-18.45 7.9.5 C. Wu, L.C. Kwek, C.H. Oh, Ye Yeo (Singapore, Singapore), and Jing-Ling Chen (Tianjin, P.R. China)
Entanglement witness of multi-qubits
- 18.50-19.10 7.9.6 K. Matsumoto (Tokyo, Japan)
Query Complexity and Quantum Estimation

Friday, July 28

Seminar 7.10

Chair: Gregor Weihs (Canada)

- 11.00-11.20 7.10.1 M. Mosca (Waterloo, Canada)
Single spin measurement using cellular automata techniques
- 11.25-11.45 7.10.2 T. Durt (Brussels, Belgium)
Experimental Measurements of Discrete Wigner Distributions
- 11.50-12.15 7.10.3 Z. Hradil, J. Rehacek (Olomouc, Czech Republic), and D. Mogilevtsev (Minsk, Belarus)
Biased tomography schemes: an objective approach
- 12.20-12.40 7.10.4 J. Rehacek, Z. Hradil, Z. Bouchal, R. Celechovsky (Olomouc, Czech Republic), and L.L. Sanchez-Soto (Madrid, Spain)
Experimental uncertainty relations for vortex beams

12.45-14.00 **Lunch**

Seminar 7.11

Chair: Yoon-Ho Kim (Korea)

- 14.00-14.20 7.11.1 G. Weihs (Waterloo, Canada)
Semiconductor Sources of Entangled Photon Pairs
- 14.25-14.45 7.11.2 D. Vitali (Camerino, Italy), G. Morigi, and J. Eschner (Barcelona, Spain)
A stationary source of two-mode squeezed light from a single cold atom

- 14.50-15.10 7.11.3 R. Shimizu, T. Yamaguchi, Y. Mitsumori, H. Kosaka, and K. Edamatsu (Sendai, Japan)
Generation of polarization entanglement from spatially correlated photon pairs
- 15.15-15.30 7.11.4 I. Ali Khan and J.C. Howell (Rochester, USA)
Experimental Demonstration of High Dimensional Time-Energy Entangled Two-Photon States
- 15.35-15.55 7.11.5 F. Koenig, E.J. Mason, F.N.C. Wong, and M.A. Albota (St. Andrews, UK)
Efficient source of polarization entangled photon pairs at 800 and 1600nm
- 16.00-16.20 7.11.6 R. Kaltenbaek, B. Blauensteiner, M. Zukowski, M. Aspelmeyer, and A. Zeilinger (Vienna, Austria)
Quantum interference of photons from independent sources
- 16.25-16.45 **Coffee break**
- Seminar 7.12**
Chair: Zdenek Hradil (Czech Republic)
- 16.45- 17.05 7.12.1 Yoon-Ho Kim (Pohang, Korea)
Concentrating partial entanglement of two photons via entanglement swapping
- 17.10-17.30 7.12.2 N. Korolkova, D.J. Menzies, and L.C. Davila Romero (St. Andrews, UK)
Nonclassical polarization states and entanglement concentration
- 17.35-17.55 7.12.3 P. Turner (Calgary, Canada), R.B.A. Adamson, L.K. Shalm, A-N. Zhang, M.W. Mitchell, and A.M. Steinberg (Toronto, Canada)
Experimental Characterization of Multiphoton Polarization
- 18.00-18.20 7.12.4 E. Moreva, S. Straupe, G. Maslennikov, and S. Kulik (Moscow, Russia)
Polarization ququarts based on biphotons
- 18.25-18.45 7.12.5 P. Walborn (Rio de Janeiro, Brazil)
Quantum key distribution with higher-order alphabets using spatially-encoded qudits
- 18.50- 18.55 S. Kulik (Moscow, Russia)
Closing remarks

Read, send manuscripts, and subscribe

Laser Physics Letters, 2006, Vol. 3, 12 Issues,
ISSN print: 1612-2011, ISSN electronic: 1612-202X

Why you should become a *Laser Physics Letters* author, reader, and subscriber:

1. *The best original manuscripts on laser physics*
 2. *Short publication times: peer-reviewed promptly by members of the editorial board and published within two weeks*
 3. *Convenience of online publication*
-

Editor-in-Chief:

Pavel P. Pashinin, A.M. Prokhorov General Physics Institute, Moscow, Russia

Deputy Editors-in-Chief:

Valery M. Yermachenko, Moscow State Engineering Physics Institute, Moscow, Russia

Igor V. Yevseyev, Moscow State Engineering Physics Institute, Moscow, Russia

Editorial Board:

Wilhelm Becker (Germany), **Dusan Chorvat** (Slovakia), **Sandro De Silvestri** (Italy), **Mikhail V. Fedorov** (Russia), **Alexander Gaeta** (USA), **Sergey A. Gonchukov** (Russia), **Miroslav Jelinek** (Czech Republic), **Ursula Keller** (Switzerland), **Jürgen Lademann** (Germany), **Jamal T. Manassah** (USA), **Pierre Meystre** (USA), **Richard B. Miles** (USA), **Guillaume Petite** (France), **Lev P. Pitaevskii** (Italy), **Kirill A. Prokhorov** (Russia), **Michael Scalora** (USA), **Vladimir M. Shalaev** (USA), **John E. Sipe** (Canada), **Ken-ichi Ueda** (Japan), **Ian A. Walmsley** (UK), **Heinz P. Weber** (Switzerland), **Ernst Wintner** (Austria), **Eli Yablonovitch** (USA), **Vyacheslav I. Yukalov** (Russia), **Aleksey M. Zheltikov** (Russia)

Short Instructions to Authors

Manuscripts should be sent by e-mail only (staffeditor@lasphys.com), they will be listed according to the date they are received by the Staff Editor. Prior to submission, please send the Transfer of Copyright Agreement (<http://www.lasphys.com>) to the following address:

Prof. Valery M. Yermachenko,
9-4-286, Ostrovityanova Str., Moscow 117437, Russia
Phone: +7-495-504-2392

All participants of LPHYS'06 are invited to submit papers to this international journal.

On-line version of the journal Laser Physics Letters on: www.lphys.org

International Journal

Laser Physics

www.lasphys.com

Read, send manuscripts, and subscribe

Laser Physics, 2006, Vol. 16, 12 Issues,

ISSN print: 1054-660X, ISSN electronic: 1555-6611

Why you should become a *Laser Physics* author, reader, and subscriber:

1. *The best original manuscripts on laser physics*

2. *Convenience of online publication*

Editor-in-Chief:

Pavel P. Pashinin, A.M. Prokhorov General Physics Institute, Moscow, Russia

Deputy Editor-in-Chief:

Igor V. Yevseyev, Moscow State Engineering Physics Institute, Moscow, Russia

Editorial Board:

Zhores I. Alferov (Russia), **Sergey N. Bagayev** (Russia), **Vanderlei S. Bagnato** (Brazil), **Zhou Bingkun** (China), **See Leang Chin** (Canada), **Steven Chu** (USA), **Joseph H. Eberly** (USA), **Mikhail V. Fedorov** (Russia), **Gaetano Ferrante** (Italy), **Costas Fotakis** (Greece), **Sergey A. Gonchukov** (Russia), **John L. Hall** (USA), **Sven R. Hartmann** (USA), **Massimo Inguscio** (Italy), **Norbert Kroo** (Hungary), **Jamal T. Manassah** (USA), **Gennady A. Mesyats** (Russia), **Gerard A. Mourou** (France), **Kirill A. Prokhorov** (Russia), **Peeter M. Saari** (Estonia), **Vitaly V. Samartsev** (Russia), **Wolfgang Sandner** (Germany), **Herbert Walther** (Germany), **Douwe A. Wiersma** (The Netherlands), **Chiyoe Yamanaka** (Japan), **Valery M. Yermachenko** (Russia), **Vyacheslav I. Yukalov** (Russia), **Aleksey M. Zheltikov** (Russia)

Short Instructions to Authors

An original and one copy of the manuscript should be mailed or may be sent by Express Mail to the following address:

Prof. Igor V. Yevseyev
Department of Theoretical Physics
Moscow State Engineering Physics Institute
31, Kashirskoe Shosse
Moscow 115409
Russia

On-line version of the journal Laser Physics on: www.springerlink.com