

# 22th International Laser Physics Workshop (LPHYS'13)

July 15–19, 2013, Prague, Czech Republic

## PROGRAM



[www.lasphys.com](http://www.lasphys.com)



**22th International Laser Physics Workshop  
(LPHYS'13)  
July 15–19, 2013, Prague, Czech Republic**

**ORGANIZED BY:**

*A.M. Prokhorov General Physics Institute, Russian Academy of Sciences  
(RAS), Moscow, Russia  
Institute of Physics ASCR, Prague, Czech Republic  
Czech Technical University in Prague, Prague, Czech Republic  
The international journal Laser Physics  
The international journal Laser Physics Letters  
International Laser Center, Moscow State University, Moscow, Russia  
National Research Nuclear University MEPhI, Moscow, Russia*

**SPONSORED BY:**

*Russian Foundation for Basic Research, Moscow, Russia  
International Laser Center of Moscow State University, Moscow, Russia  
Astro Ltd, Bentonville, AR, USA  
Standa, Vilnius, Lithuania  
Thorlabs GmbH, Dachau/Munich, Germany  
HiLASE Project, IP ASCR, Prague, Czech Republic  
Crytur s.r.o. Turnov, Czech Republic  
Pfeiffer Vacuum Austria GmbH, Prague, Czech Republic  
TVM SS s.r.o., Prague, Czech Republic  
Safibra s.r.o., Ricany, Czech Republic  
Research Centre TOPTEC, Turnov, Czech Republic  
Nicolet CZ s.r.o., Prague, Czech republic*

## CHAIRMEN:

**Miroslav Jelínek**

Institute of Physics ASCR  
Czech Technical University in Prague,  
Faculty of Biomedical Engineering, Prague, Czech Republic

**Pavel P. Pashinin**

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

## STEERING COMMITTEE:

<b>Vanderlei S. Bagnato</b>	University of São Paulo, São Carlos, Brazil
<b>Jens Biegert</b>	Institute of Photonic Sciences (ICFO), Barcelona, Spain
<b>Joseph H. Eberly</b>	University of Rochester, Rochester, USA
<b>Mikhail V. Fedorov</b>	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
<b>Sergey A. Gonchukov</b>	National Research Nuclear University MEPhI, Moscow, Russia
<b>Miroslav Jelínek</b>	Institute of Physics, Prague, Czech Republic
<b>Sergey P. Kulik</b>	Moscow State University, Moscow, Russia
<b>Vladimir A. Makarov</b>	Moscow State University, Moscow, Russia
<b>Dejan Milošević</b>	University of Sarajevo, Sarajevo, Bosnia and Herzegovina
<b>Gérard Mourou</b>	Institut Lumière Extrême, ENSTA, Palaiseau, France
<b>Kirill A. Prokhorov</b>	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
<b>Wolfgang Sandner</b>	Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany
<b>Toshi Tajima</b>	Japan Atomic Energy Research Institute, Kyoto, Japan
<b>Valery M. Yermachenko</b>	National Research Nuclear University MEPhI, Moscow, Russia
<b>Vyacheslav I. Yukalov</b>	Joint Institute for Nuclear Research, Dubna, Russia
<b>Aleksey M. Zheltikov</b>	Moscow State University, Moscow, Russia

## ADVISORY & PROGRAM COMMITTEE:

- P. Agostini** Ohio State University, Columbus, OH, USA  
**S.N. Bagayev** Institute of Laser Physics, RAS, Novosibirsk, Russia  
**W. Becker** Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany  
**D. Bruss** Universität Düsseldorf, Düsseldorf, Germany  
**M. Čech** FJFI, Czech Technical University in Prague, Prague, Czech Republic  
**S.L. Chin** Laval University, Quebec, Canada  
**D. Chorvat** International Laser Center, Bratislava, Slovakia  
**S. De Silvestri** Politecnico di Milano, Milano, Italy  
**E.M. Dianov** FORC, RAS, Moscow, Russia  
**M. Dubinskii** US Army Research Laboratory, Adelphi, MD, USA  
**E. Giacobino** Laboratoire Kastler Brossel, Université Pierre et Marie Curie, Paris, France  
**M.D. Girardeau** University of Arizona, Tucson, USA  
**H. Jelínková** Czech Technical University, Prague, Czech Republic  
**Y. Kato** Japan Atomic Energy Agency, Kyoto, Japan  
**O. Kocharovskaya** Texas A&M University, College Station, TX, USA  
**V.I. Konov** A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia  
**O.G. Kosareva** Moscow State University, Moscow, Russia  
**N. Kroo** Research Institute for Solid State Physics and Optics, HAS, Budapest, Hungary  
**A.S. Kurkov** A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia  
**J. Lademann** Humboldt University, Berlin, Germany  
**C.K. Law** Chinese University of Hong Kong, Hong Kong, China  
**L. Longo** Siena University, Institute Laser Medicine, Firenze, Italy  
**A. Lvovsky** The University of Calgary, Calgary, Canada  
**G.A. Mesyats** Vice-President of RAS, Moscow, Russia  
**V.B. Morozov** Moscow State University, Moscow, Russia  
**N.B. Narozhny** National Research Nuclear University MEPhI, Moscow, Russia  
**V.Ya. Panchenko** Institute on Laser and Information Technologies, RAS, Shatura, Moscow Region, Russia  
**G. Petite** CEA/DSM/DRECAM, Saclay, France  
**G. Pichler** Institute of Physics, Zagreb, Croatia  
**L.P. Pitaevskii** University of Trento, Trento, Italy  
**J. Řídký** Institute of Physics ASCR, Prague, Czech Republic

<b>J. Rosina</b>	FBME, Czech Technical University in Prague, Prague, Czech Republic
<b>N.N. Rubtsova</b>	Rzhanov Institute of Semiconductor Physics, Novosibirsk, Russia
<b>P.M. Saari</b>	Tartu Institute of Physics, Tartu, Estonia
<b>R.-P. Salathé</b>	EPF Lausanne, Lausanne, Switzerland
<b>V.V. Samartsev</b>	Kazan Physics Technical Institute, RAS, Kazan, Russia
<b>B. Sanders</b>	The University of Calgary, Calgary, Canada
<b>V.M. Shalaev</b>	Purdue University, West Lafayette, USA
<b>I.A. Shcherbakov</b>	A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia
<b>D.P. Shepherd</b>	University of Southampton, Southampton, UK
<b>G.V. Shlyapnikov</b>	LPTMS, Orsay, France
<b>O. Svelto</b>	Politecnico di Milano, Milan, Italy
<b>E.A. Vinogradov</b>	Institute of Spectroscopy, RAS, Troitsk, Russia
<b>M. Vrakking</b>	Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany
<b>K. Ueda</b>	University of Electro-Communications, Tokyo, Japan
<b>I.A. Walmsley</b>	Oxford University, Oxford, UK
<b>E. Wintner</b>	Vienna University of Technology, Vienna, Austria
<b>E. Zaremba</b>	Queen's University, Kingston, Canada
<b>N.V. Znamensky</b>	Russian Research Center “Kurchatov Institute”, Moscow, Russia

#### **LOCAL ORGANIZING COMMITTEE:**

<b>Helena Jelínková</b>	Czech Technical University in Prague, Czech Republic
<b>Pavel Bakule</b>	Institute of Physics ASCR, Czech Republic
<b>Josef Blažej</b>	Czech Technical University in Prague, Czech Republic
<b>Alexander Dejneka</b>	Institute of Physics ASCR, Czech Republic
<b>Tatjana Dostálová</b>	Charles University, Czech Republic
<b>Martin Fibrich</b>	Institute of Physics ASCR, Czech Republic
<b>Alexandr Jančárek</b>	Czech Technical University in Prague, Czech Republic
<b>Milan Kálal</b>	Czech Technical University in Prague, Czech Republic
<b>Tomáš Kocourek</b>	Institute of Physics ASCR, Czech Republic
<b>Tomáš Mocek</b>	Institute of Physics ASCR, Czech Republic
<b>Michal Němec</b>	Czech Technical University in Prague, Czech Republic
<b>Petr Písařík</b>	Institute of Physics ASCR, Czech Republic
<b>Jan Remsa</b>	Institute of Physics ASCR, Czech Republic
<b>Jan Štoklasa</b>	Czech Technical University in Prague, Czech Republic
<b>Jan Šulc</b>	Czech Technical University in Prague, Czech Republic
<b>Alena Zavadilová</b>	Czech Technical University in Prague, Czech Republic
<b>Markéta Zezulová</b>	Institute of Physics ASCR, Czech Republic

## SPONSORS



**Russian Foundation for Basic Research, Moscow, Russia**



**International Laser Center of Moscow State University,  
Moscow, Russia**



**Astro Ltd., Bentonville, AR, USA**



**Standa, Vilnius, Lithuania**



**Thorlabs GmbH, Dachau/Munich, Germany**



**HiLASE Project, IP ASCR, Prague, Czech Republic**

**Crytur s.r.o. Turnov, Czech Republic**

**Pfeiffer Vacuum Austria GmbH, Prague, Czech Republic**

**TVM SS s.r.o., Prague, Czech Republic**

**Safibra s.r.o., Ricany, Czech Republic**

**Research Centre TOPTEC, Turnov, Czech Republic**

**Nicolet CZ s.r.o., Prague, Czech republic**

## Background

The twenty second annual International Laser Physics Workshop (LPHYS'13) will be held from July 15 to July 19, 2013 in the city of Prague, Czech Republic, at the Hotel Krystal and Czech Technical University hosted by the Institute of Physics ASCR and Czech Technical University in Prague. LPHYS'13 is a conference in the continuous series of workshops held annually at various world locations: Dubna 1992, Dubna/Volga river tour 1993, New York 1994, Moscow/Volga river tour (jointly with NATO SILAP Workshop) 1995, Moscow 1996, Prague 1997, Berlin 1998, Budapest 1999, Bordeaux 2000, Moscow 2001, Bratislava 2002, Hamburg 2003, Trieste 2004, Kyoto 2005, Lausanne 2006, León 2007, Trondheim 2008, Barcelona 2009, Foz do Iguaçu 2010, Sarajevo 2011 and Calgary 2012. The total number of participants is expected to be about 450. In the past, participation was typically from over 30 countries.

## Proceedings

The Workshop proceedings will be published in the open access Journal of Physics: Conference Series (JPCS), which is part of the IOP Conference Series. All papers published in the IOP Conference Series are fully citable and upon publication will be free to download.

You need to prepare your proceeding manuscript using Microsoft Word or LaTeX then convert these files to PDF, according to submission guidelines and templates presented at the IOP Conference Series Portal.

You are asked to send your proceeding paper converted to PDF format directly addressed to your proceeding Editor who was your scientific seminar Co-chair no later than December 15, 2013.

**It is important to ensure that when you submit your proceeding paper, it is in its final form ready for publication, and has been thoroughly proofread. IOP do not copyedit papers and will not send out author proofs prior to publication.**

All proceeding papers sent after the above deadline will be rejected automatically.

As usual, all papers will undergo an appropriate peer reviewing process which, in this case, will be done as soon as possible.



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

The Steering Committee of LPHYS'13 would like to bring your attention to the following possibility. If you feel that your article deserves super-rapid publication, you can submit it to the journal Laser Physics Letters. The information concerning your manuscript submission and instructions for manuscript preparation for the journal Laser Physics Letters can be found on:

**[www.lasphys.com](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: **Olga Kocharovskaya** (USA) and **Kirill A. Prokhorov** (Russia)

### **Seminar 2            Strong Field & Attosecond Physics**

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

### **Seminar 3            Biophotonics**

Co-Chairs: **Helena Jelínková** (Czech Republic), **Sergey A. Gonchukov** (Russia), and **Jürgen Lademann** (Germany)

### **Seminar 4            Physics of Lasers**

Co-Chair: **Ivan A. Shcherbakov** (Russia)

### **Seminar 5            Nonlinear Optics and Spectroscopy**

Co-Chairs: **See Leang Chin** (Canada), **Yuri Kivshar** (Australia), and **Vladimir A. Makarov** (Russia)

### **Seminar 6            Physics of Cold Trapped Atoms**

Co-Chairs: **Vanderlei S. Bagnato** (Brazil), **Vyacheslav I. Yukalov** (Russia), and **Eugene Zaremba** (Canada)

### **Seminar 7            Quantum Information Science**

Co-Chairs: **Marco Genovese** (Italy), **Sergey P. Kulik** (Russia), and **Leong Chuan Kwek** (Singapore)

### **Seminar 8            Fiber Lasers**

Co-Chairs: **Sergey A. Babin** (Russia) and **Evgenii M. Dianov** (Russia)

### **Symposium        Extreme Light Technologies, Science, and Applications**

Co-Chairs: **Gérard Mourou** (France), **Nikolay B. Narozhny** (Russia) and **Georg Korn** (Germany)

## Meeting Format and Location of the Events

**Hall 1** – CTU, rooms 256 and 358

**Hall 3** – CTU, room 366

**Hall 5** – Hotel Krystal, room 341

**Hall 7** – Hotel Krystal, room 249

**Hall 2** – CTU, room 256

**Hall 4** – Hotel Krystal, Aula

**Hall 6** – Hotel Krystal, room 246

**Hall 8** – Hotel Krystal, room 164

Welcome Remarks	July 15	08.45-09.00	<b>Hall 1</b>
Welcome Party	July 15	19.30-21.30	National Technical Library
Conference Dinner	July 17	19.30-23.30	National House of Vinohrady
Closing Remarks	July 19	18.00-18.15	<b>Hall 2</b>
Plenary Sessions (PS)			
	July 15	09.00-09.45	<b>Hall 1</b>
	July 15	09.45-10.30	<b>Hall 1</b>
	July 16	08.45-09.30	<b>Hall 1</b>
	July 16	09.30-10.15	<b>Hall 1</b>
	July 17	08.45-09.30	<b>Hall 1</b>
	July 17	09.30-10.15	<b>Hall 1</b>
	July 18	08.45-09.30	<b>Hall 1</b>
	July 18	09.30-10.15	<b>Hall 1</b>
Seminar 1			
	July 15	11.00-19.00	<b>Hall 7</b>
	July 16	11.00-18.50	<b>Hall 7</b>
	July 17	11.00-18.50	<b>Hall 7</b>
	July 18	11.00-18.50	<b>Hall 7</b>
	July 19	09.00-10.35	<b>Hall 7</b>
Seminar 2			
	July 15	11.00-18.10	<b>Hall 4</b>
	July 16	11.00-18.25	<b>Hall 4</b>
	July 17	11.00-18.25	<b>Hall 4</b>
	July 18	11.00-18.25	<b>Hall 4</b>
	July 19	09.00-16.05	<b>Hall 4</b>
Seminar 3			
	July 15	11.00-18.50	<b>Hall 8</b>
	July 16	11.00-16.15	<b>Hall 8</b>
Seminar 4			
	July 18	15.10-18.45	<b>Hall 8</b>
Seminar 5			
	July 15	11.00-18.35	<b>Hall 5</b>

Seminar 6

July 15	11.00-18.40	<b>Hall 2</b>
July 16	11.00-18.40	<b>Hall 2</b>
July 17	11.00-18.40	<b>Hall 2</b>
July 18	11.00-18.40	<b>Hall 2</b>
July 19	09.00-17.00	<b>Hall 2</b>

Seminar 7

July 15	11.00-18.30	<b>Hall 3</b>
July 16	11.00-18.30	<b>Hall 3</b>
July 17	11.00-18.10	<b>Hall 3</b>
July 18	11.00-18.30	<b>Hall 3</b>
July 19	09.00-18.50	<b>Hall 3</b>

Seminar 8

July 17	11.00-19.00	<b>Hall 8</b>
July 18	11.00-15.10	<b>Hall 8</b>

Symposium

July 15	11.00-18.20	<b>Hall 6</b>
July 16	11.00-18.15	<b>Hall 6</b>
July 17	11.00-18.00	<b>Hall 6</b>
July 18	11.00-12.45	<b>Hall 6</b>

Poster Session

July 16	19.00-21.00	Hotel Krystal
July 18	19.00-21.00	Hotel Krystal

## Scientific Program – Schedule

<b>Monday, July 15, 2013</b>							
<b>08.45-09.00</b>	<b>Welcome Remarks Hall 1</b>						
<b>09.00-09.45</b>	<b>PS1: Wolfgang Sandner (ELI-DC International Association) Hall 1</b>						
<b>09.45-10.30</b>	<b>PS2: Guglielmo Lanzani (Milano, Italy) Hall 1</b>						
<b>10.30-11.00</b>	<b>Coffee Break</b>						
	<b>Hall 2</b>	<b>Hall 3</b>	<b>Hall 4</b>	<b>Hall 5</b>	<b>Hall 6</b>	<b>Hall 7</b>	<b>Hall 8</b>
<b>11.00-12.45</b>	Seminar 6.1	Seminar 7.1	Seminar 2.1	Seminar 5.1	Symposium EL.1	Seminar 1.1	Seminar 3.1
<b>12.45-14.00</b>	<b>Lunch</b>						
<b>14.00-16.15</b>	Seminar 6.2	Seminar 7.2	Seminar 2.2	Seminar 5.2	Symposium EL.2	Seminar 1.2	Seminar 3.2
<b>16.15-16.45</b>	<b>Coffee Break</b>						
<b>16.45-18.50</b>	Seminar 6.3	Seminar 7.3	Seminar 2.3	Seminar 5.3	Symposium EL.3	Seminar 1.3	Seminar 3.3
<b>19.30-21.30</b>	<b>Welcome Party National Technical Library</b>						

<b>Tuesday, July 16, 2013</b>							
<b>08.45-09.30</b>	<b>PS3: André Mysyrowicz (Palaiseau, France) Hall 1</b>						
<b>09.30-10.15</b>	<b>PS4: Tamar Seideman (Evanston, IL, USA) Hall 1</b>						
<b>10.15-11.00</b>	<b>Coffee Break</b>						
	<b>Hall 2</b>	<b>Hall 3</b>	<b>Hall 4</b>	<b>Hall 5</b>	<b>Hall 6</b>	<b>Hall 7</b>	<b>Hall 8</b>
<b>11.00-12.45</b>	Seminar 6.4	Seminar 7.4	Seminar 2.4		Symposium EL.4	Seminar 1.4	Seminar 3.4
<b>12.45-14.00</b>	<b>Lunch</b>						
<b>14.00-16.15</b>	Seminar 6.5	Seminar 7.5	Seminar 2.5		Symposium EL.5	Seminar 1.5	Seminars 3.5
<b>16.15-16.45</b>	<b>Coffee Break</b>						
<b>16.45-18.50</b>	Seminar 6.6	Seminar 7.6	Seminar 2.6		Symposium EL.6	Seminar 1.6	
<b>19.00-21.00</b>	<b>Poster Session Hotel Krystal</b>						

<b>Wednesday, July 17, 2013</b>							
<b>08.45-09.30</b>	<b>PS5: Francesco De Martini (Rome, Italy) Hall 1</b>						
<b>09.30-10.15</b>	<b>PS6: Makoto Tsubota (Osaka, Japan) Hall 1</b>						
<b>10.15-11.00</b>	<b>Coffee Break</b>						
	<b>Hall 2</b>	<b>Hall 3</b>	<b>Hall 4</b>	<b>Hall 5</b>	<b>Hall 6</b>	<b>Hall 7</b>	<b>Hall 8</b>
<b>11.00-12.45</b>	Seminar 6.7	Seminar 7.7	Seminar 2.7		Symposium EL.7	Seminar 1.7	Seminar 8.1
<b>12.45-14.00</b>	<b>Lunch</b>						
<b>14.00-16.15</b>	Seminar 6.8	Seminar 7.8	Seminar 2.8		Symposium EL.8	Seminar 1.8	Seminar 8.2
<b>16.15-16.45</b>	<b>Coffee Break</b>						
<b>16.45-18.50</b>	Seminar 6.9	Seminar 7.9	Seminar 2.9		Symposium EL.9	Seminar 1.9	Seminar 8.3
<b>19.30-23.30</b>	<b>Conference Dinner National House of Vinohrady</b>						

<b>Thursday, July 18, 2013</b>							
<b>08.45-09.30</b>	<b>PS7: Evgueni M. Dianov (Moscow, Russia) Hall 1</b>						
<b>09.30-10.15</b>	<b>PS8: Martin Weitz (Bonn, Germany) Hall 1</b>						
<b>10.15-11.00</b>	<b>Coffee Break</b>						
	<b>Hall 2</b>	<b>Hall 3</b>	<b>Hall 4</b>	<b>Hall 5</b>	<b>Hall 6</b>	<b>Hall 7</b>	<b>Hall 8</b>
<b>11.00-12.45</b>	Seminar 6.10	Seminar 7.10	Seminar 2.10		Symposium EL.10	Seminar 1.10	Seminar 8.4
<b>12.45-14.00</b>	<b>Lunch</b>						
<b>14.00-16.15</b>	Seminar 6.11	Seminar 7.11	Seminar 2.11			Seminar 1.11	Seminar 8.5, 4.1
<b>16.15-16.45</b>	<b>Coffee Break</b>						
<b>16.45-18.50</b>	Seminar 6.12	Seminar 7.12	Seminar 2.12			Seminar 1.12	Seminar 4.2
<b>19.00-21.00</b>	<b>Poster Session Hotel Krystal</b>						

<b>Friday, July 19, 2013</b>							
	<b>Hall 2</b>	<b>Hall 3</b>	<b>Hall 4</b>	<b>Hall 5</b>	<b>Hall 6</b>	<b>Hall 7</b>	<b>Hall 8</b>
<b>09.00-10.45</b>	Seminar 6.13		Seminar 2.13			Seminar 1.13	
<b>10.15-11.00</b>	<b>Coffee Break</b>						
<b>11.00-12.45</b>	Seminar 6.14	Seminar 7.13	Seminar 2.14				
<b>12.45-14.00</b>	<b>Lunch</b>						
<b>14.00-16.15</b>	Seminar 6.15	Seminar 7.14	Seminar 2.15				
<b>16.15-16.45</b>	<b>Coffee Break</b>						
<b>16.45-18.50</b>	Seminar 6.16	Seminar 7.15					
<b>19.00-19.15</b>	<b>Closing Remarks</b> Hall 2						

## Plenary Sessions

---

**Monday, July 15**

### PLENARY SESSION (PS1)

09.00-09.45      **Wolfgang Sandner** (ELI-DC International Association)  
*High Power Laser Science at the Extreme Light  
Infrastructure ELI*

### PLENARY SESSION (PS2)

09.45-10.30      **Guglielmo Lanzani** (Italy)  
*The Organic Artificial Retina Project*

---

**Tuesday, July 16**

### PLENARY SESSION (PS3)

08.45-09.30      **André Mysyrowicz** (France)  
*Filamentation of Femtosecond Laser Pulses: Recent  
Advances*

### PLENARY SESSION (PS4)

09.30-10.15      **Tamar Seideman** (USA)  
*Coherent Control of Transport and Mechanical Motions in  
Molecular Junctions*

---

**Wednesday, July 17**

### PLENARY SESSION (PS5)

08.45-09.30      **Francesco De Martini** (Italy)  
*Interpretation of Quantum Nonlocality by Weyl's  
Conformal Geometrodynamics*



**PLENARY SESSION (PS6)**

09.30-10.15 **Makoto Tsubota** (Japan)  
*Quantum Hydrodynamics and Turbulence in Bose-Einstein  
Condensates*

---

**Thursday, July 18**

**PLENARY SESSION (PS7)**

08.45-09.30 **Evgueni M. Dianov** (Russia)  
*On the Threshold of Petaera*

**PLENARY SESSION (PS8)**

09.30-10.15 **Martin Weitz** (Germany)  
*Bose-Einstein Condensation of Photons*

**Seminar 1**  
**Modern Trends in Laser Physics**  

---

**Monday, July 15**

**Seminar 1.1**

**Chair:** P. Hemmer (USA)

- 11.00-11.30 1.1.1 G.S. Agarwal (Stillwater, OK, USA)  
*Photon aided and inhibited tunneling of photons*
- 11.30-11.55 1.1.2 G.S.J. Dajczgewand, J-L. Le Gouët, A. Louchet-Chauvet,  
M.F. Pascual-Winter, and T. Chanelière (Orsay, France)  
*Optical memory at telecom wavelength in erbium doped samples*
- 11.55-12.20 1.1.3 D. Rieländer, M. Gündoğan, K. Kutluer, J. Fekete, P.M. Ledingham,  
M. Mazzera, M. Cristiani (Castelldefels, Spain), and H. de Riedmatten  
(Castelldefels and Barcelona, Spain)  
*Quantum storage of ultra-narrow band heralded single photons in a doped solid*
- 12.20-12.45 1.1.4 H.S-Y. Zhu, D.-W. Wang, H.-T. Zhou, M.-J. Guo, J.-X. Zhang  
(Beijing and Taiyuan, China), and J. Evers (Heidelberg, Germany)  
*Experimental realization of an optical diode with EIT*
- 12.45-14.00 **Lunch**

**Seminar 1.2**

**Chair:** T. Chanelière (France)

- 14.00-14.30 1.2.1 P. Hemmer (College Station, TX, USA)  
*Toward nanoscale imaging and lithography with magnetic resonance in solids*
- 14.30-15.00 1.2.2 N. Bruno, A. Martin, P. Sekatski, N. Sangouard, R.T. Thew, and  
N. Gisin, (Geneva, Switzerland)  
*Realization of a photonic micro-macro entangled state*
- 15.00-15.25 1.2.3 M. Zhang, G. Romanov, T. Horrom, E. Mikhailov, and I. Novikova  
(Williamsburg, Virginia, USA)  
*Propagation of quantum optical fields in optically thick atomic medium*
- 15.25-15.50 1.2.4 A. Kalachev (Kazan, Russia) and O. Kocharovskaya (College Station,  
TX, USA)  
*Three-dimensional theory of cavity-assisted quantum storage based on  
phase-matching control*
- 15.50-16.15 1.2.5 N. Sinclair, E. Saglamyurek, H. Mallazadeh, J.A. Slater, M. Hedges  
(Calgary, Canada), M. George, R. Ricken, W. Sohler (Paderborn,  
Germany), D. Oblak, and W. Tittel (Calgary, Canada)  
*Frequency-multiplexed quantum memories with read-out on demand for  
quantum repeaters*
- 16.15-16.45 **Coffee break**

**Seminar 1.3**

**Chair:** H. de Riedmatten (Spain)

- 16.45-17.10 1.3.1 A. Arcangeli, M. Lovrić, B. Tumino, A. Ferrier, and P. Goldner  
(Paris, France)  
*Raman heterodyne detection of hyperfine transitions in  $\text{Eu}^{3+}:\text{Y}_2\text{SiO}_5$*
- 17.10-17.35 1.3.2 K. Ichimura, H. Goto, S. Nakamura, and M. Kujiraoka (Kawasaki, Japan)  
*Observation of a dip in a cavity-mode spectrum due to rare-earth ions in a  
crystal for a readout of a nuclear-spin qubit*

- 17.35-18.00 1.3.3 F.E. Becerra, J. Fan, and A. Migdall (Gaithersburg, MD, USA)  
*Implementation of unambiguous discrimination of multiple nonorthogonal coherent states*
- 18.00-18.20 1.3.4 P. Piksarv, A. Valdmann, H. Valtna-Lukner, R. Matt (Tartu, Estonia), and P. Saari (Tartu and Tallinn, Estonia)  
*Ultrabroadband Airy light bullets*
- 18.20-18.40 1.3.5 B.S. Ham (Gwangju, S. Korea)  
*Coherence population transfer-based Dynamic Airy diffractions*
- 18.40-19.00 1.3.6 R.A. Akhmedzhanov, A.A. Bondartsev, L.A. Gushchin, I.V. Zelensky, A.G. Litvak, D.A. Sobgayda (Nizhny Novgorod, Russia), and O. Kocharovskaya (College Station, TX, USA)  
*Photon echoes in atomic frequency comb structures in  $Pr^{3+}:LaF_3$*
- 

## Tuesday, July 16

### Seminar 1.4

**Chair:** S. Yelin (USA)

- 11.00-11.30 1.4.1 A.I. Lvovsky, (Calgary, Canada and Moscow, Russia), Y. Kurochkin (Moscow, Russia), R. Ghobadi, A.S. Prasad, and C. Simon (Calgary, Canada)  
*Making bigger entangled states*
- 11.30-11.55 1.4.2 F. Jelezko (Ulm, Germany)  
*NV centers in diamond for nanoscale sensing and imaging*
- 11.55-12.20 1.4.3 J. Miles, Z. Simmons, and D. Yavuz (Madison, Wisconsin, USA)  
*Subwavelength atom localization using electromagnetically induced transparency*
- 12.20-12.45 1.4.4 G. Romanov, T. Horrom, I. Novikova, and E. Mikhailov (Williamsburg, Virginia, USA)  
*Superluminal propagation of pulsed squeezed vacuum*
- 12.45-14.00 **Lunch**

### Seminar 1.5

**Chair:** S. Lukishova (USA)

- 14.00-14.25 1.5.1 V.O. Lorenz (Newark, DE, USA)  
*Ultrafast spontaneous Raman spectroscopy of liquids*
- 14.25-14.55 1.5.2 A. Materny, M. Namboodiri, and T. Zeb Khan (Bremen, Germany)  
*Femtosecond time-resolved nonlinear optical spectroscopy with nanometer spatial resolution used for the investigation of organic semiconductor nanostructures*
- 14.55-15.25 1.5.3 G.R. Welch, D.V. Voronine, A.M. Sinyukov, X. Hua, K. Wang, P.K. Jha, E. Munusamy, S.E. Wheeler, A.V. Sokolov, and M.O. Scully (College Station, TX, USA)  
*Time-resolved surface-enhanced coherent sensing of nanoscale molecular complexes*
- 15.25-15.55 1.5.4 W. Hui, S. Gomes da Costa, H.B. de Aguiar, A. Volkmer (Stuttgart, Germany), and G. Tempea (Wien, Austria)  
*Nonlinear optical microscopy with few-cycle laser pulses*
- 15.55-16.15 1.5.5 E.A. Sagitova, K.A. Prokhorov, G.Yu. Nikolaeva, P.P. Pashinin, M.A. Guseva (Moscow, Russia), P. Donfack, B. von Kammer, and A. Materny (Bremen, Germany)  
*Raman study of temperature-dependent structural evolution of polyethylene/clay nanocomposites*
- 16.15-16.45 **Coffee break**

## Seminar 1.6

**Chair:** G.R. Welch (USA)

- 16.45-17.10 1.6.1 C.H. Keitel, S.M. Cavaletto, C. Buth, Z. Harman, W. Liao, S. Das, and A. Pálffy (Heidelberg and Garching, Germany)  
*Nuclear and ionic quantum dynamics in high-frequency light fields*
- 17.10-17.30 1.6.2 F. Vagizov (College Station, TX, USA), V. Polovinkin, Y. Radeonychev (Nizhny Novgorod, Russia), R. Shakhmuratov (Kazan, Russia), and O. Kocharovskaya (College Station, TX, USA)  
*Quantum optics with gamma photons and nuclear transitions*
- 17.30-17.50 1.6.3 J. Evers (Heidelberg, Germany)  
*Controlling optical response via Fano resonances in atoms and nuclei*
- 17.50-18.10 1.6.4 S.F. Yelin and G.-D. Lin (Storrs, USA)  
*Superradiance and quantum optics: Chirps and collective Lamb shift*
- 18.10-18.30 1.6.5 S. Oettel, R. Wiegner (Erlangen, Germany), G.S. Agarwal (Stillwater, OK, USA), and J. von Zanthier (Erlangen, Germany)  
*Directional superradiant emission from independent classical sources*
- 18.30-18.50 1.6.6 A.A. Zadernovsky (Moscow, Russia)  
*Two-quantum photon-phonon laser*
- 

## Wednesday, July 17

### Seminar 1.7

**Chair:** N. Davidson (Israel)

- 11.00-11.30 1.7.1 P. Pillet (Orsay, France)  
*Two-, few- and many body interactions in a frozen Rydberg gas*
- 11.30-11.55 1.7.2 K. Sycz, A. Wojciechowski, and W. Gawlik (Kraków, Poland)  
*Magneto-optics with cold atoms*
- 11.55-12.20 1.7.3 A. Akimov, J. Thompson, T. Tiecke, J. Feist, D. Chang, C. Yu, N. De Leon, L. Liu, A. Zibrov, H. Park, V. Vuletić, M. Lukin (Moscow, Russia and Cambridge, USA)  
*From plasmonics to cold atoms*
- 12.20-12.45 1.7.4 T.L. Margalit, M. Rosenbluh, and A.D. Wilson-Gordon (Ramat Gan, Israel)  
*Degenerate two-level system in the presence of a transverse magnetic field*
- 12.45-14.00 **Lunch**

### Seminar 1.8

**Chair:** A. Lvovsky (Canada)

- 14.00-14.25 1.8.1 A. Belyanin, X. Yao (College Station, TX, USA), and M. Tokman (Nizhny Novgorod, Russia)  
*Nonlinear generation of coherent mid-infrared and THz radiation in graphene and topological insulators*
14. 25-14.45 1.8.2 A.M. Akulshin, R. McLean (Melbourne, Australia), and D. Budker (Berkeley, USA)  
*Highly coherent and directional cw infrared and blue radiation generated by multiwave mixing processes*
- 14.45-15.10 1.8.3 Y.J. Ding (Bethlehem, PA, USA)  
*Laser cooling of nitride-based materials and structures based on anti-stokes and stokes raman scattering: a novel scheme*
- 15.10-15.30 1.8.4 Z. Tan (Wuhan, China), B. Zou, and Y. Zhu (Miami, FL, USA)  
*Light controlling light in a coupled cavity-atom system*

- 15.30-15.55 1.8.5 N.N. Rubtsova, V.G. Gol'dort, V.N. Ishchenko, E.B. Khvorostov, S.A. Kochubei (Novosibirsk, Russia), and V.A. Reshetov (Togliatti, Russia)  
*Stimulated photon echo in ytterbium vapor at the transition 0-1: three in one*
- 15.55-16.15 1.8.6 G.A. Koganov (Eilat, Israel) and R. Shuker (Beer Sheva, Israel)  
*Quantum resonances in three-level  $\Lambda$ -system driven by pulsed pump*
- 16.15-16.45 **Coffee break**
- Seminar 1.9**  
**Chair:** N. Rubtsova (Russia)
- 16.45-17.10 1.9.1 S.G. Lukishova (Rochester, USA)  
*Liquid crystals under two extremes: (1) high-power laser irradiation, and (2) single-photon level*
- 17.10-17.30 1.9.2 M.R. Belić, M.S. Petrović, N.B. Aleksić, and A.I. Strinić (Doha, Qatar and Belgrade, Serbia)  
*The influence of noise on nematic –shape invariant solitons in nematic liquid crystals*
- 17.30-17.50 1.9.3 M. Frank, M. Jelínek, M. Čech, and V. Kubeček (Prague, Czech Republic)  
*Passively mode-locked Nd:GdVO<sub>4</sub> lasers in a bounce geometry with continuous and quasi-continuous pumping*
- 17.50-18.10 1.9.4 P. Severová, M. Chyla, M. Smrz, T. Miura, A. Endo, and T. Mocek (Prague, Czech Republic)  
*Transient thermal and OPD calculation of high power Yb:YAG thin disk regenerative amplifier*
- 18.10-18.30 1.9.5 A. Pirri, G. Toci, M. Vannini (Sesto Fiorentino, Italy), N. Nikl, and V. Babin (Prague, Czech Republic)  
*Spectroscopic properties and laser performance of Yb:LuAG ceramic and crystal*
- 18.30-18.50 1.9.6 H. Chmelickova, J. Tomastik, R. Ctvrtlik, J. Supik (Olomouc, Czech Republic), S. Nemecek, and M. Misek (Plzeň, Czech Republic)  
*High power diode laser remelting of metals*

### Thursday, July 18

#### Seminar 1.10

**Chairs:** C. Keitel (Germany)

- 11.00-11.30 1.10.1 J.C. Kieffer (INRS, Canada)  
*The 200TW ALLS facility: recent achievements on particule acceleration and perspectives*
- 11.30-12.00 1.10.2 J.P. Marangos (London, United Kingdom)  
*Measuring sub-femtosecond molecular dynamics*
- 12.00-12.25 1.10.3 V. Kimberg, S.B. Zhang, and N. Rohringer (Dresden and Hamburg, Germany)  
*Molecular x-ray lasers*
- 12.25-12.45 1.10.4 V.A. Antonov, Y.V. Radeonychev, M.Yu. Ryabikin (Nizhny Novgorod, Russia), and O. Kocharovskaya (College Station, TX, USA)  
*Extremely short pulse formation from resonant radiation in atomic gases: analytical solutions and basic mechanisms*
- 12.45-14.00 **Lunch**

### Seminar 1.11

**Chair:** J. Marangos (UK)

- 14.00-14.30 1.11.1 D. Kartashov, S. Haesler, A. Pugzlys, A. Baltuska (Vienna, Austria), M. Spanner, S. Patchkovskii (Ottawa, Ontario, Canada), F. Morales, M. Richter, O. Smirnova, and M. Ivanov (Berlin, Germany)  
*Lasing without inversion: unforeseen consequences of laser filamentation*
- 14.30-15.00 1.11.2 H. Rabitz (Princeton, NJ, USA)  
*The complementary roles of control landscape topology and structure to enable high-efficiency laser manipulation*
- 15.00-15.25 1.11.3 H.U. Jang, J. Lee, G.-Y. Chen, and W.T. Hill (College Park, Maryland, USA)  
*Unveiling the critical role of phase in strong-field optimal control*
- 15.25-15.50 1.11.4 V. Bonačić-Koutecký (Berlin, Germany and Split, Croatia)  
*Simulation and control of photochemistry*
- 15.50-16.15 1.11.5 A.V. Sokolov, K. Wang, X. Hua, and M.C. Zhi (College Station, TX, USA)  
*Pulse shaping and beam shaping in broadband coherent Raman generation*
- 16.15-16.45 **Coffee break**

### Seminar 1.12

**Chair:** A. Sokolov (USA)

- 16.45-17.10 1.12.1 M. Nixon, O. Katz, E. Small, Y. Bromberg, A.A. Friesem, Y. Silberberg, and N. Davidson (Rehovot, Israel)  
*Real time wavefront shaping through scattering media by all optical feedback*
- 17.10-17.35 1.12.2 M. Förster, M. Krüger, S. Thomas (Garching, Germany), M. Schenk P. Hommelhoff (Garching and Erlangen, Germany), G. Wachter, Ch. Lemell, and J. Burgdörfer (Vienna, Austria)  
*Strong-field physics at a metal nanopit in experiment and theory*
- 17.35-18.00 1.12.3 T. Nakajima (Kyoto, Japan)  
*Light wave at the interface between a dielectric and a metamaterial: re-interpretation of negative refraction*
- 18.00-18.25 1.12.4 Yu.E. Lozovik (Troitsk, Russia)  
*Nanophotonics and plasmonics based on topological insulators and graphene*
- 18.25-18.50 1.12.5 E.E. Narimanov (West Lafayette, USA)  
*Light in natural hyperbolic materials*
- 12.45-14.00 **Lunch**

---

**Friday, July 19**

### Seminar 1.13

**Chair:** A. Kalachev (Russia)

- 09.00-09.25 1.13.1 G. Leuchs and M. Sondermann (Erlangen, Germany)  
*Time reversal symmetry in optics – coupling a photon to an atom*
- 09.25-09.45 1.13.2 S.V. Polyakov (Gaithersburg, MD, USA)  
*Pulsed single photon sources for scalable quantum information processing*
- 09.45-10.10 1.13.3 C. O'Brien, N. Lauk, and M. Fleischhauer (Kaiserslautern, Germany)  
*Fidelity of single photon propagation in an EIT based quantum memory with four-wave mixing*
- 10.10-10.30 1.13.4 Y.V. Vladimirova, E.D. Chubchev, V.M. Pastukhov, and V.N. Zadkov (Moscow, Russia)  
*Quantum optics of quantum emitters near plasmonic nanostructures*
- 10.30-10.35 1.14.5 K.A. Prokhorov (Moscow, Russia)  
*Closing remarks*

---

**Poster Session, Tuesday, July 16**

**Chair:** E.A. Sagitova (Russia)

- P1.1 V.A. Antonov, M.Yu. Emelin, M.Yu. Ryabikin, Y.V. Radeonychev (Nizhny Novgorod, Russia), and O. Kocharovskaya College Station, TX, USA)  
*Extremely short pulse formation via resonant scattering of HF radiation by laser-field-dressed atoms: three-level model versus Schrodinger equation*
- P1.2 S.G. Kosionis, A.F. Terzis, J. Boviatsis, and E. Paspalakis (Patras, Greece)  
*Third order nonlinearity in a strongly driven semiconductor quantum dot coupled to a metallic nanosphere*
- P1.3 M. Fibrich, T. Hambálek, M. Němec, J. Šulc, and H. Jelínková (Prague, Czech Republic)  
*Multiline generation capabilities of diode pumped Nd:YAP and Nd:YAG lasers*
- P1.4 M. Jelínek, T. Kocourek (Prague and Kladno, Czech Republic), J. Oswald, K. Rubešová, P. Nekvindová, D. Chvostová, A. Dejneka, V. Železný, V. Studnička, and K. Jurek (Prague, Czech Republic)  
*Optical properties of laser prepared Er and Er, Yb doped LiNbO<sub>3</sub> waveguiding layers*
- P1.5 H. Jelínková, J. Sulc, M. Jelínek (Prague, Czech Republic), M.E. Doroschenko, V.V. Osiko (Moscow, Russia), V.V. Badikov, and D.V. Badikov (Krasnodar, Russia)  
*CW Dy:PbGa<sub>2</sub>S<sub>4</sub> 4.3 μm laser pumped by 1.3 or 1.7 μm radiation*
- P1.6 S.P. Merkulova, A.L. Merkulov, and Yu.E. Lozovik (Troitsk, Russia)  
*Spaser based on metallic dashed nanoline: properties, application and laser technology*
- P1.7 M. Nemeč, J. Sulc, R. Svejkar, H. Jeliinkova (Prague, Czech Republic), M.E. Doroschenko, V.A. Konyushkin, and V.V. Osiko (Moscow, Russia)  
*Spectroscopics and laser properties of Er<sup>3+</sup>-doped fluoride laser ceramics*
- P1.8 S. Panahibakhs, S. Jelvani (Tehran, Iran), M. Jaberi (Rast, Iran), M. Mollabashi, and M.H. Maleki (Tehran, Iran)  
*Increasing the laser damage threshold of Nd:YAG crystals by the color center annihilation*
- P1.9 J. Pilar, M. Divoky, P. Sikocinski, V. Kmetik, O. Slezak, A. Lucianetti, T. Mocek (Prague, Czech Republic), and S. Bonora (Padova, Italy)  
*Wavefront correction estimation and simulation of Hilase multi-slab laser system*
- P1.10 A. Pirri, G. Toci, and M. Vannini (Sesto Fiorentino, Italy), M. Ciofini (Firenze, Italy), L. Esposito, J. Hostaša, A. Lapucci (Faenza, Italy), L.A. Gizzi, and L. Labate (Pisa, Italy)  
*Thermal lens measurements in Yb-doped YAG, LuAG, Lu<sub>2</sub>O<sub>3</sub>, Sc<sub>2</sub>O<sub>3</sub> ceramic lasers*
- P1.11 K.A. Prokhorov, Yu.V. Zavgorodnev, E.A. Sagitova, G.Yu. Nikolaeva, P.P. Pashinin, T.M. Ushakova, L.A. Novokshonova, E.E. Starchak (Moscow, Russia), A.A. Kovalchuk (Houston, TX, USA), P.M. Nedorezova, A.N. Klyamkina, B.F. Shklyaruk, M.A. Guseva, E.M. Antipov (Moscow, Russia), P. Donfack, and A. Materny (Bremen, Germany)  
*Raman evaluation of phase composition and conformational order of new polymeric materials*

- P1.12 E.A. Sagitova, K.A. Prokhorov, Yu.V. Zavgorodnev, G.Yu. Nikolaeva, P.P. Pashinin, M.A. Guseva, V.A. Gerasin, E.M. Antipov (Moscow, Russia), P. Donfackd, and A. Maternyd (Bremen, Germany)  
*Raman evaluation of molecular orientation in polymer materials*
- P1.13 P. Sikocinski (Prague, Czech Republic), P. Crump, R. Staske (Berlin, Germany), M. Divoky, A. Lucianetti, and T. Mocek (Prague, Czech Republic)  
*Characterization of high power diode-laser stacks for high-energy-class solid-state lasers*
- P1.14 J. Šulc, R. Švejkar, H. Jelínková (Prague, Czech Republic), W. Ryba-Romanowski (Wrocław, Poland), and T. Łukasiewicz (Warsaw, Poland)  
*Diode pumped room-temperature operating eye-safe Er:YVO<sub>4</sub> and Er:GdVO<sub>4</sub> lasers*
- P1.15 A. Zavadilová, V. Kubeček, and J. Šulc (Prague, Czech Republic)  
*Repetition rate multiplication in synchronously intracavity pumped ring optical parametrical oscillator*



**Seminar 2**  
**Strong Field & Attosecond Physics**

---

**Monday, July 15**

**Seminar 2.1**

**Chair:** D. Bauer (Germany)

- 11.00-11.25 2.1.1 K. Schnorr, A. Senftleben, M. Kurka (Heidelberg, Germany), A. Rudenko (Kansas, USA), L. Foucar, T. Pfeifer, K. Meyer, G. Schmid, J. Kunz, A. Broska, D. Anielski (Heidelberg, Germany), M. Kübel (Garching, Germany), M.F. Kling (Kansas, USA; Garching, Germany), Jiang (Shanghai, China), S. Mondal, T. Tachibana, K. Ueda (Sendai, Japan), T. Marchenko, M. Simon (Paris, France), J. Ullrich (Braunschweig, Germany), G. Brenner, R. Treusch, (Hamburg, Germany), C.D. Schröter, and R. Moshhammer (Heidelberg, Germany)  
*Tracing interatomic coulombic decay in Ne2 via XUV pump-probe experiments at FLASH*
- 11.25-12.50 2.1.2 U. Eichmann and S. Eilzer (Berlin, Germany)  
*Strong field excitation and acceleration in short-pulse standing-wave light fields*
- 11.50-12.15 2.1.3 G.G. Paulus (Jena, Germany)  
*Interaction of intense laser radiation with ion beams*
- 12.15-12.40 2.1.4 H. Reiss (Berlin, Germany; Washington DC, USA)  
*Recent observation of radiation pressure in ionization and implications for circular polarization*
- 12.45-14.00 **Lunch**

**Seminar 2.2**

**Chair:** M. Ivanov (Germany)

- 14.00-14.25 2.2.1 A. Bandrauk (Sherbrooke, Canada)  
*Circularly polarized attosecond pulses for attosecond magnetics*
- 14.25-14.45 2.2.2 M. Förster, M. Krüger, S. Thomas (Garching, Germany), M. Schenk, and P. Hommelhoff (Garching, Erlangen; Germany)  
*Attosecond physics in the enhanced near field of a metal nanotip*
- 14.45-15.10 2.2.3 C. Hernández-García (Salamanca, Spain; Boulder, USA), A. Picón (Argonne, USA), J. San Román, and L. Plaja (Salamanca, Spain)  
*Vortices of attosecond XUV radiation from high-orderharmonic generation*
- 15.10-15.30 2.2.4 A.G. Harvey, F. Morales, and O. Smirnova (Berlin, Germany)  
*The R-matrix method for attosecond spectroscopy*
- 15.30-15.55 2.2.5 H. Ni (Boulder, USA), C. Ruiz (Villamayor, Spain), R. Dörner (Frankfurt, Germany), and A. Becker (Boulder, USA)  
*Double photoionization of the helium dimer: Mechanism and time-resolution using attosecond streak camera5*
- 15.55-16.15 2.2.6 D. Bauer and M. Brics (Rostock, Germany)  
*Time-dependent natural orbital theory applied to correlated strong-field phenomena*
- 16.15-16.45 **Coffee break**

### Seminar 2.3

**Chair:** A.D. Bandrauk (Canada)

- 16.45-17.10 2.3.1 O. Smirnova, J. Kaushal, L. Torlina (Berlin, Germany), and M. Ivanov (Berlin, Germany; London, UK)  
*Attosecond Larmor clock*
- 17.10-17.35 2.3.2 V. Strelkov, M. Khokhlova, and N. Shubin (Moscow, Russia)  
*Perspectives of attosecond pulse generation using resonance-enhanced high harmonics*
- 17.30-17.50 2.3.3 F. Morales, I. Barth, V. Serbinenko (Berlin, Germany), S. Patchkovskii (Ottawa, Ontario, Canada) and O. Smirnova (Berlin, Germany)  
*Shaping polarization of attosecond pulses via laser control of electron and hole*
- 17.50-18.10 2.3.4 M.V. Frolov, N.L. Manakov, T.S. Sarantseva (Voronezh, Russia), and A.F. Starace (Lincoln, NE, USA)  
*HHG spectroscopy with a two-color laser field*
- 18.10-18.30 2.3.5 V. Melezhik (Dubna, Russia)  
*Three- and four-dimensional spatial modeling of atomic electrons dynamics and high-harmonics generation in strong laser fields*
- 

**Tuesday, July 16**

### Seminar 2.4

**Chair:** W. Becker (Germany)

- 11.00-11.25 2.4.1 J. Wu (London, UK), A.S. Sanz (London, UK; Madrid, Spain), B.B. Augstein (London, Leeds; UK), and C.F.M. Faria (London, UK)  
*Bohmian-trajectory analysis of high-order harmonic generation: Probing the local dynamics*
- 11.25-12.50 2.4.2 M.V. Frolov, N.L. Manakov, T.S. Sarantseva (Voronezh, Russia), and A.F. Starace (Lincoln, USA)  
*HHG spectroscopy with an elliptically polarized laser field*
- 11.50-12.15 2.4.3 A. Jaron-Becker and Y. Xia (Boulder, USA)  
*High harmonic generation from molecules: multielectron effects*
- 12.15-12.40 2.4.4 B.B. Augstein (London, Leeds; UK), T. Das, and C.F.M. Faria (London, UK)  
*High-order harmonic generation from diatomic molecules in elliptically polarized driving fields: a generalized interference condition*

12.45-14.00

**Lunch**

### Seminar 2.5

**Chair:** J. Marangos (UK)

- 14.00-14.25 2.5.1 T. Nakajima and X. Ren (Kyoto, Japan)  
*Strong field ionization of heteronuclear diatomic molecules*
- 14.25-14.50 2.5.2 H.-J. Kull (Aachen, Germany)  
*Wigner representation of ionization and scattering in strong laser fields*
- 14.50-15.15 2.5.3 H.L. Xu (Changchun, Shanghai; China), J.P. Yao, J.L. Ni, W. Chu (Shanghai, China), S.L. Chin (Shanghai, China; Quebec, Canada), K. Yamanouchi (Tokyo, Japan), Y. Cheng, and Z.Z. Xu Chu (Shanghai, China)  
*Ultrafast population inversion in molecular ions induced by femtosecond intense laser fields*
- 15.15-15.35 2.5.4 A.S. Kornev and B.A. Zon (Voronezh, Russia)  
*Anti-stokes enhanced tunneling ionization of polar molecules*

- 15.35-15.55 2.5.5 X.Y. Lai (London, UK; Wuhan, China) and C.F.M. Faria (London, UK)  
*Temporal and spatial interference in molecular above-threshold ionization with elliptically polarized fields*
- 15.55-16.15 2.5.6 V.Yu. Kharin and O.V. Tikhonova (Moscow, Russia)  
*Rotational and vibrational dynamics of a diatomic heteronuclear molecule in an ultrashort low-frequency laser pulse*

16.15-16.45

**Coffee break**

**Seminar 2.6**

**Chair:** T. Nakajima (Japan)

- 16.45-17.10 2.6.1 W. Quan, X.Y. Lai, Y. Chen, Ch. Wang, X. Liu (Wuhan, China), J. Chen (Beijing, China), E. Hasović, M. Busuladžić, D.B. Milošević (Sarajevo, Bosnia and Herzegovina), and W. Becker (Berlin, Germany)  
*Resonance-like enhancement in high-order above-threshold ionization of molecules*
- 17.10-17.35 2.6.2 L. Guo, S.S. Han, X. Liu, Y. Cheng, Z.Z. Xu, J. Fan, J. Chen, G. Chen, C.I. Blaga, A.D. DiChiara, E. Sistrunk, P. Agostini, and L.F. DiMauro (Columbus, Oh, USA), and W. Becker (Berlin, Germany)  
*The low-energy structure in above-threshold ionization and the strong-field approximation*
- 17.35-18.00 2.6.3 K. Zhang, P. Fu, and B. Wang (Beijing, China)  
*Terrace-like structure in the above-threshold ionization spectrum of an atom in a two-color field with visible and XUV frequencies*
- 18.00-18.25 2.6.4 U. Steinitz, Y. Prior, and I.Sh. Averbukh (Rehovot, Israel)  
*Laser-induced rotational Doppler shift*

**Wednesday, July 17**

---

**Seminar 2.7**

**Chair:** I. Averbukh (Israel)

- 11.00-11.25 2.7.1 C.H. Keitel, H. Bauke, M. Klaiber, E. Yakaboylu, K.Z. Hatsagortsyan, S. Ahrens, (Heidelberg, Germany), and C. Müller (Düsseldorf, Germany)  
*Under-the barrier dynamics and spin in very intense laser pulses*
- 11.25-11.50 2.7.2 V. Serbinenko (Berlin, Germany), M.Yu. Ivanov (Berlin, Germany; London, UK), and O. Smirnova (Berlin, Germany)  
*Multicolor control and measurement of tunneling*
- 11.50-12.15 2.7.3 A.V. Veltheim, B. Manschwetus (Berlin, Germany), W. Quan (Wuhan, China), B. Borchers, G. Steinmeyer, H. Rottke, and W. Sandner (Berlin, Germany)  
*Frustrated tunnel ionization of noble gas dimers: Rydberg electron shake-off by electron charge oscillation in the dimer ion core*
- 12.15-12.40 2.7.4 Y. Prior, A. Salomon (Rehovot, Israel), R. Kolkowski, and J. Zyss (Cachan, France)  
*Strong coupling of metallic nanocavities*

12.45-14.00

**Lunch**

**Seminar 2.8**

**Chair:** C. Keitel (Germany)

- 14.00-14.25 2.8.1 A.V. Gulyaev and O.V. Tikhonova (Moscow, Russia)  
*Self-consistent propagation of femtosecond laser pulses through a gas medium with efficient field-induced rotational dynamics of molecules*

- 14.25-14.50 2.8.2 J. Hengster, T. Neumann, T. Gaumnitz (Hamburg, Germany), H. Schröder (Garching, Germany), O.D. Mücke (Hamburg, Germany), F.X. Kärtner (Hamburg, Germany; Cambridge, USA), and Th. Uphues (Hamburg, Germany)  
*Ultra-short laser pulse characterization by propagation in fluorescent liquid dye cells*
- 14.50-15.10 2.8.3 S.V. Popruzhenko (Moscow, Russia)  
*Coulomb force in complex space and time*
- 15.10-15.30 2.8.4 M. Richter, S. Patchkovskii (Ottawa, Canada), F. Morales, O. Smirnova (Berlin, Germany), and M. Ivanov (Berlin, Germany)  
*Bound states of a free electron: The role of the Kramers-Henneberger atom in the higher-order Kerr effect*
- 15.30-15.50 2.8.5 X. Xie, K. Doblhoff-Dier, S. Roither, M. Schöffler, D. Kartashov (Vienna, Austria), H. Xu (Vienna, Austria; Changchun, China), T. Rathje, G.G. Paulus (Jena, Germany), A. Baltuška, S. Gräfe, and M. Kitzler (Vienna, Austria)  
*Controlling isomerization and fragmentation of polyatomic molecules by laser-sub-cycle electron recollision*
- 15.50-16.15 2.8.6 L. Zhang, X. Xie, S. Roither, D. Kartashov, M. Schöffler (Vienna, Austria), D. Shafir (Ottawa, Canada; Rehovot, Israel), P.B. Corkum (Ottawa, Canada), A. Baltuška (Vienna, Austria), A. Staudte (Ottawa, Canada), and M. Kitzler (Vienna, Austria)  
*Exploring sub-cycle ionization dynamics with orthogonally polarized two-color laser pulses*
- 16.15-16.45 **Coffee break**
- Seminar 2.9**  
**Chair:** Y. Prior (Israel)
- 16.45-17.10 2.9.1 B.B. Augstein (London, Leeds, UK), T. Shaaran (London, UK, Gif-sur-Yvette, France), J. Wu, X. Lai, T. Das (London, UK), A.S. Sanz (London, UK; Madrid, Spain), and C.F.M. Faria (London, UK)  
*Influence of the pulse shape, frequency and polarization on the electron dynamics in strong laser fields*
- 17.10-17.35 2.9.2 R. Moshhammer (Heidelberg, Germany)  
*Multi-electron wave-packet motion and the role of excited states in strong field ionization of atoms*
- 17.35-18.00 2.9.3 M.Yu. Emelin, L.A. Smirnov, and M.Yu. Ryabikin (Nizhny Novgorod, Russia)  
*Atomic photoionization and dynamic stabilization with relativistically intense arbitrarily polarized light: magnetic field effects revisited*
- 18.00-18.25 2.9.4 A.M. Popov, O.V. Tikhonova, and E.A. Volkova (Moscow, Russia)  
*Polarization response of an atomic system in nonperturbative regime of photoionization*

### Thursday, July 18

#### Seminar 2.10

**Chair:** L. Plaja (Spain)

- 11.00-11.25 2.10.1 J. Leeuwenburgh, S. Sukiasyan, B. Cooper, A. Zair, J. Marangos, V. Averbukh (London, UK), O. Smirnova, and M. Ivanov (Berlin, Germany)  
*High harmonic spectroscopy of core rearrangement: from laser-driven dynamics to frustrated Auger-type processes*

- 11.25-11.50 2.10.2 A.V. Flegel (Voronezh, Russia; Lincoln NE, USA), M.V. Frolov, N.L. Manakov (Voronezh, Russia), A.F. Starace (Lincoln NE, USA), and A.N. Zheltukhin (Voronezh, Russia)  
*Control of atomic dynamics in laser-assisted electron-atom scattering through the driving laser ellipticity*
- 11.50-12.15 2.10.3 A. Picón (Argonne IL, USA)  
*Manipulation of resonant Auger processes with strong optical fields and high-intensity x rays*
- 12.15-12.40 2.10.4 S. Varró (Budapest, Hungary)  
*A new class of exact analytic solutions of the Dirac equation of a charged particle in a monochromatic plane electromagnetic wave in a medium*
- 12.45-14.00  
**Lunch**
- Seminar 2.11**  
**Chair:** A.M. Popov (Russia)
- 14.00-14.25 2.11.1 J. Durá (Castelldefels, Spain), N. Camus (Heidelberg, Germany), B. Wolter, A. Kumar, A. Thai, A. Britz, M. Hemmer, M. Baudisch (Castelldefels, Spain), A. Senftleben (Heidelberg, Germany), J. Ullrich (Heidelberg, Braunschweig, Germany), R. Moshhammer (Heidelberg, Germany), and J. Biegert (Castelldefels, Barcelona, Spain)  
*New features in mid-IR strong-field ionization*
- 14.25-14.45 2.11.2 L.N. Alexandrov, M.Yu. Emelin, and M.Yu. Ryabikin (Nizhny Novgorod, Russia)  
*Coulomb effects in directional photocurrent generation from strong-field ionized gases*
- 14.45-15.10 2.11.3 F. Pegoraro, A.S. Nindrayog, and A. Macchi (Pisa, Italy)  
*Ion acceleration by collisionless shocks and solitons in laser plasma interactions*
- 15.10-15.30 2.11.4 T.V. Liseykina (Novosibirsk, Russia; Rostock, Germany) and D. Bauer (Rostock, Germany)  
*Plasma-formation dynamics in laser-droplet interaction*
- 15.30-15.50 2.11.5 A.A. Silaev and N.V. Vvedenskii (Nizhny Novgorod, Russia)  
*Ionization-induced excitation of low-frequency residual currents in plasmas produced by two-color laser pulses*
- 15.50-16.10 2.11.6 W. Steffen and H.-J. Kull (Aachen, Germany)  
*Stationary mode analysis of plasma waves in multi-stream quantum plasmas*
- 16.15-16.45  
**Coffee break**
- Seminar 2.12**  
**Chair:** C.F.M. Faria (UK)
- 16.45-17.10 2.12.1 M. Oppermann, S.J. Weber, L.J. Frasinski (London, UK), M.Yu. Ivanov (London, UK; Berlin, Germany), and J.P. Marangos (London, UK)  
*Multichannel contributions in the nonsequential double ionization of CO<sub>2</sub>*
- 17.10-17.35 2.12.2 M. Kübel (Garching, Germany), N.G. Kling, K.J. Betsch (Garching, Germany; Manhattan KS, USA; Charlottesville VA, USA), N. Camus, A. Kaldun (Heidelberg, Germany), U. Kleineberg (Garching, Germany), I. Ben-Itzhak (Manhattan KS, USA), R.R. Jones (Charlottesville VA, USA), G.G. Paulus (Jena, Germany), T. Pfeifer (Heidelberg, Germany), J. Ullrich (Heidelberg, Braunschweig, Germany), R. Moshhammer (Heidelberg, Germany), M.F. Kling (Garching, Germany; Manhattan KS, USA), and B. Bergues (Garching, Germany)  
*Correlated double ionization of Ar and N<sub>2</sub> following a single recollision*

- 17.35-18.00 2.12.3 A.S. Kornev and B.A. Zon (Voronezh, Russia)  
*Relativistic effects in many-body theory of extreme multiplicity ions formation in superstrong laser field*
- 18.00-18.25 2.12.4 I.V. Smetanin, V.D. Zvorykin, A.O. Levchenko, A.V. Shutov, and N.N. Ustinovskii (Moscow, Russia)  
*Theory of the (2+1) Resonance enhanced multi-photon ionization of atmospheric air by high-power UV laser radiation*

---

**Friday, July 19**

**Seminar 2.13**

**Chair:** H. Reiss (Germany)

- 09.00-09.25 2.13.1 A. Di Piazza and N. Neitz (Heidelberg, Germany)  
*Stochasticity effects in quantum radiation reaction*
- 09.25-09.50 2.13.2 A. Pálffy, H.M.C. Cortés, C. Müller, H.A. Weidenmüller, and C.H. Keitel (Heidelberg, Germany)  
*Alpha decay and neutron emission in strong laser pulses*
- 09.50-10.15 2.13.3 S.K. Krajewska and J.Z. Kamiński (Warszawa, Poland)  
*Breit-Wheeler pair creation by finite laser pulses*
- 10.15-10.30 2.13.4 P.R. Sharapova and O.V. Tikhonova (Moscow, Russia)  
*Behaviour of a model Rydberg atom in classical and quantum electromagnetic fields alternating each other*

10.30-11.00

**Coffee break**

**Seminar 2.14**

**Chair:** U. Eichmann (Germany)

- 11.00-11.25 2.14.1 I.A. Burenkov and O.V. Tikhonova (Moscow, Russia)  
*Ionization of an atomic system in a few-photon non-classical field*
- 11.25-11.50 2.14.2 M. Twardy, K. Krajewska, and J.Z. Kamiński (Warszawa, Poland)  
*Shape effects in non-linear Thompson and Compton processes*
- 11.50-12.15 2.14.3 J. Yao, G. Li (Shanghai, China), X. Jia (Chengdu, China), X. Hao (Beijing, China), B. Zeng, C. Jing, W. Chu, J. Ni, H. Zhang, H. Xie, C. Zhang (Shanghai, China), Z. Zhao (Changsha, China), J. Chen (Beijing, China), X. Jun Liu (Wuhan, China), Y. Cheng, and Z. Xu (Shanghai, China)  
*All optical measurement of alignment-dependent ionization of carbon dioxide from lower-lying orbitals*
- 12.15-12.40 2.14.4 J. Liu and L. Fu (Beijing, China)  
*Semiclassical modeling of nonsequential double ionization of atoms and molecules with linearly or circularly polarized intense laser fields*

12.45-14.00

**Lunch**

**Seminar 2.15**

**Chair:** M. Fedorov (Russia)

- 14.00-14.25 2.15.1 A.V. Gets and V.P. Krainov (Moscow, Russia)  
*Electron angular distributions at ionization of atoms by intense attosecond few-cycle pulses*
- 14.25-14.45 2.15.2 L. Torlina (Berlin, Germany), M. Ivanov (Berlin, Germany; London, UK), J. Kaushal, and O. Smirnova (Berlin, Germany)  
*An analytic R-matrix approach to strong field ionization: Coulomb and correlation effects*
- 14.45-15.05 2.15.3 S. Augustin and C. Müller (Düsseldorf, Germany)  
*Interference effects in electron-positron pair creation by the interaction of a bichromatic laser field and a nucleus*

- 15.05-15.25 2.15.4 I. Gonoskov and M. Marklund (Umeå, Göteborg, Sweden)  
*Quantum effects in intense strongly focused laser fields*
- 15.25-15.45 2.15.5 S. Vucic (Belgrade, Serbia)  
*Electronic density of H atom in a laser field*
- 15.45-16.05 2.15.6 G. Castiglia, P.P. Corso, D. Cricchio, R. Daniele, E. Fiordilino, and F. Morales (Palermo, Italy)  
*Nanorings driven by a laser field*
- 16.05-16.45 **Coffee break**
- 

**Poster Session, Tuesday, July 16**

- P2.1 S.V. Borzunov, M.V. Frolov (Voronezh, Russia), M.Yu. Ivanov, (London, UK; Berlin, Germany), N.L. Manakov, S.S. Marmo (Voronezh, Russia), and A.F. Starace (Lincoln NE, USA)  
*Zero-range potential model for strong field molecular processes: Dynamic polarizability and photodetachment cross section*
- P2.2 M.A. Khokhlova and V.V. Strelkov (Moscow, Russia)  
*Theory of resonant high harmonic generation by low-frequency laser field*
- P2.3 A.S. Kornev, I.M. Semiletov, and B.A. Zon (Voronezh, Russia)  
*Keldysh theory of tunnel ionization of a complex atom by a few-cycle laser pulse*
- P2.4 O.D. Skoromnik (Heidelberg, Germany), I.D. Feranchuk (Minsk, Belarus), and C.H. Keitel (Heidelberg, Germany)  
*Collapse-and-revival dynamics of strongly laser-driven electrons*
- P2.5 A.A. Silaev and N.V. Vvedenskii (Nizhny Novgorod, Russia)  
*Effective absorption of wave function in quantum-mechanical simulations of strong-field phenomena caused by ultrashort laser pulses*
- P2.6 S. Varró and N. Kroó (Budapest, Hungary)  
*Field-enhancement and near-field effects in electron and light emission from metal surfaces*
- P2.7 D.M. Heim, W.P. Schleich (Ulm, Germany), P.M. Alsing (Rome NY, USA), J.P. Dahl (Lyngby, Denmark), and S. Varró (Budapest, Hungary)  
*Tunneling of an energy eigenstate through a parabolic barrier viewed from Wigner phase space*
- P2.8 A. Wöllert, M. Klaiiber, E. Yakaboylu, K.Z. Hatsagortsyan, H. Bauke, and C.H. Keitel (Heidelberg, Germany)  
*The tunneling picture in relativistic regimes*
- P2.9 F. Cajiao-Veléz, K. Krajewska, and J.Z. Kamiński (Warszawa, Poland)  
*Space effects in photo-emission from nano-tips*
- P2.10 V. Usachenko and P. Pyak (Uzbekistan, Tashkent)  
*Enhanced low-energy multiphoton above-threshold ionization in a strong laser field of mid-infrared wavelength*
- P2.11 A.H. Gevorgyan, K.B. Oganessian, G.K. Matinyan (Yerevan, Armenia), and M.V. Fedorov (Moscow, Russia)  
*Laser on the base of stack of cholesteric liquid crystal and isotropic medium layers*
- P2.12 V.V. Buyadzhi (Odessa, Ukraine)  
*Multi-photon transitions in many-electron atoms in a one and two-color laser fields with account of a plasmas medium effects*

- P2.13 A.V. Glushkov (Odessa, Ukraine)  
*Atomic and nuclear systems in super strong laser field: Relativistic energy approach*
- P2.14 O.Yu. Khetselius (Odessa, Ukraine)  
*Laser electron-gamma-nuclear spectroscopy of atoms and ions: "Shake-up" and cooperative e-g-N effects*



**Seminar 3**  
**Biophotonics**  

---

**Monday, July 15**

**Seminar 3.1**

**Chair:** J. Lademann (Germany)

- 11.00-11.30 3.1.1 O.I. Baum, E.N. Sobol, and A.V. Bolchunov (Troitsk, Russia)  
*Laser effect on uveoscleral outflow path towards new method for glaucoma treatment*
- 11.30-11.55 3.1.2 M.E. Darvin (Berlin, Germany), S. Springer (Jena, Germany), A. Boettcher, M. Kaatz (Gera, Germany), and J. Lademann (Berlin, Germany)  
*Optimization the measurement procedure for the determination of collagen to elastin ageing index of dermis with the use of two-photon microscopy*
- 11.55-12.20 3.1.3 A. Rebolla, E.A.L.S. Arisava, and P.R. Barja (São José dos Campos, Brazil)  
*In vivo, diffuse reflectance evaluation of skin lesions: experimental study*
- 12.20-12.45 3.1.4 Z. Harman, B.J. Galow, Y.I. Salamin, J-X. Li, and C.H. Keitel (Heidelberg, Germany)  
*Laser-generated proton beams for cancer treatment*
- 12.45-14.00 **Lunch**

**Seminar 3.2**

**Chair:** H. Jelinkova (Czech Republic)

- 14.00-14.30 3.2.1 D.O. Solovyeva, E.P. Lukashev, P.A. Linkov, P.S. Samokhvalov, S.V. Dayneko, S.Yu. Zaitsev, V.A. Oleinikov, A.A. Shemetov, A. Sukhanova, I. Nabiev, and A.A. Chistyakov (Moscow, Russia)  
*Photovoltaic cells engineered from purple membranes of halophilic bacteria and semiconductor quantum dots*
- 14.30-15.00 3.2.2 A. Sukhanova, N. Bouchonville, A. Cigne, M. Molinari (Reims, France), P. Linkov, P. Samokhvalov, V. Oleinikov, and I. Nabiev (Moscow, Russia)  
*Biophotonics with nano-bio hybrid material with controlled fret efficiency engineered from quantum dots and membrane protein bacteriorhodopsin*
- 15.00-15.25 3.2.3 A.E. Efimov, K.E. Mochalov, A.Yu. Bobrovsky, I.I. Agapov, A.A. Chistyakov, V.A. Oleinikov, and I. Nabiev (Moscow, Russia)  
*Combined scanning probe tomography and optical imaging technique as a novel tool for 3d-characterization of biophotonic and nanophotonic materials*
- 15.25-15.50 3.2.4 S. Razi, H. Pazokian, S. Jelvani, and M. Mollabashi (Tehran, Iran)  
*Pulsed ultraviolet laser induced morphology on titanium; micro structuring and changes in biocompatibility*
- 15.50-16.15 3.2.5 K. Mochalov, A. Bobrovsky, A. Efimov, V. Oleinikov, P. Linkov, P. Samokhvalov, A. Sukhanova, and I. Nabiev (Moscow, Russia)  
*Circularly polarized emission from cholesteric liquid crystal material doped with quantum dots can be controlled both optically and electrically*
- 16.15-16.45 **Coffee break**

**Seminar 3.3**

**Chair:** V. Bagnato (Brazil)

- 16.45-17.10 3.3.1 T. Dostalova, M. Kasparova, M. Buckova, H. Jelinkova, M. Nemeč, J. Sulc, and P. Bradna (Prague, Czech Republic)  
*Er:YAG laser radiation: contact versus non-contact enamel ablation and sonic-activated bulk composite placement – micrleakage evaluation*

- 17.10-17.35 3.3.2 R.J. Narayan, A. Doraiswamy, S.D. Gittard (Raleigh, NC, USA),  
A. Ovsianikov, and B.N. Chichkov (Hannover, Germany)  
*Laser processing of materials for medical applications*
- 17.35-18.00 3.3.3 H. Pazokian, M. Mollabashi, J. Barzin, K. Khadem, and  
A. Hashemi panah (Tehran, Iran)  
*Laser surface modification of polyethersulfone hemodialysis membranes*
- 18.00-18.25 3.3.4 A.V. Koval' and E.V. Stepanov (Moscow, Russia)  
*Near-IR laser-based system for  $^{13}\text{CO}_2/^{12}\text{CO}_2$  ratio analysis in breath*
- 18.25-18.50 3.3.5 T.Yu. Moguilnaya, P.V. Bobkov, and V.A. Tomilin (Moscow, Russia)  
*Monitoring E-coli and coliphages at turbulent flow of water by the methods  
of coherent spectroscopy*
- 

### Tuesday, July 16

#### Seminar 3.4

**Chair:** T. Dostalova (Czech Republic)

- 11.00-11.30 3.4.1 J. Lademann, H. Richter, M.C. Meinke, W. Sterry, and A. Patzelt  
(Berlin, Germany)  
*Investigation of the triggered release of drugs from particles by laser  
scanning spectroscopic measurements*
- 11.30-11.55 3.4.2 M. Atif, S. Devanesan, M.S. AlSalhi, V. Masilamani, K. Farhat, and  
D. Rabah (Riyadh, Saudi Arabia)  
*Kidney cancer diagnosis by fluorescence spectra of blood and urine*
- 11.55-12.20 3.4.3 I. Ferreira, G. Silva, J.F. Strixino, C. Grecco, V.S. Bagnato,  
D.M.F. Salvadori, and N.S. Rocha (São Carlos, Brazil)  
*Influence of photodynamic therapy on BCL-2, BAX and HER-2 in breast  
carcinogenesis*
- 12.20-12.45 3.4.4 D.P. de L. Carvalho, J.G. Pinto, L.C. Fontana, and J.F. Strixino (São  
Carlos, Brazil)  
*Photodynamic antimicrobial activity of isolated microorganisms from  
infected wounds – study in vitro*

**Lunch**

#### Seminar 3.5

**Chair:** J. Lademann (Germany)

- 14.00-14.30 3.5.1 G. Giubileo and A. Puiu (Frascati, Italy)  
*Detectability of melamine in milk by LPAS*
- 14.30-15.00 3.5.2 S. Banita, C. Achim, M. Patachia, C. Matei, A.M. Bratu, M. Petrus,  
and D.C. Dumitras (Bucharest, Romania)  
*Characterization of organic vs. nonorganic raspberries and strawberries  
fruits using laser photoacoustic spectroscopy*
- 15.00-15.25 3.5.3 V.S. Bagnato, G. Sabino, C. Kurachi, and N. Inada (São Carlos, Brazil)  
*Determination of threshold dose distribution in microbial control*
- 15.25-15.50 3.5.4 D. Chorvat, A. Mateasik, and A. Chorvatova (Bratislava, Slovakia)  
*Spectral fingerprinting of endogenous fluorophores - from laboratory to  
experimental medicine*
- 15.50-16.15 3.5.5 D. Chorvat (Bratislava, Slovakia)  
*Information about the project Laserlab Europe*

---

### Poster Session, Thursday, July 18

**Chair:** M. Darvin (Germany)

- P3.1 C. Achim, A.M. Bratu, C. Matei, M. Petrus, M. Patachia, S. Banita, and D.C. Dumitras (Bucharest, Romania)  
*Non-invasive breath gas analysis based on spectroscopic measurements*
- P3.2 M. Kasparova, V. Kroulikova, P. Hlinakova, T. Dostalova, and S. Podzimek (Prague, Czech Republic)  
*Biostimulation effect of low level laser on healing process after third molars surgery based on biochemical markers in saliva*
- P3.3 S.V. Kireev, E.M. Podolyako, S.L. Shnyrev, I.G. Simanivsky, and A.I. Guseva (Moscow, Russia)  
*Optical absorption method of natural gas component analysis in real time*
- P3.4 S.V. Kireev, S.L. Shnyrev, I.G. Simanivsky, I.V. Sobolevsky, S.V. Suganeev, and A.A. Kondrashov (Moscow, Russia)  
*Fluorescence of  $^{127}\text{I}$  and  $^{129}\text{I}$  isotopes excited by radiation of copper vapor lasers (578.2 nm)*
- P3.5 T. Kocourek, M. Jelinek, J. Mikšovský, K. Jurek, and M. Weiserova (Prague, Czech Republic)  
*Silver doped metal layers for medical applications*
- p3.6 J. Kyplová, M. Jelinek, J. Urzová, J. Mikšovský, L. Bauerová, and K. Dušek (Prague, Czech Republic)  
*Assessment of suitability of excimer laser in treating onychomycosis*
- P3.7 C. Nita, A.C. Popescu, R. Cristescu, A.C. Popa, G.E. Stan, M.A. Husanu, I. Pasuk, D. Popescu, and I.N. Mihailescu (Bucharest, Romania)  
*Protective carbon-based coatings for metal surfaces exposed to corrosive body fluids*
- P3.8 C. Popescu, C. Nita, A.C. Popescu, R. Cristescu, I. Iordache (Bucharest, Romania), M. Kandyla, and M. Kompitsas (Athens, Greece)  
*Gold/ITO-based surface plasmon resonance cholesterol sensor*
- P3.9 S.V. Kireev, S.L. Shnyrev, I.G. Simanovsky, I.V. Sobolevsky, S.V. Suganeev, and A.A. Kondrashov (Moscow, Russia)  
*Fluorescence of molecular iodine isotopes excited by Nd laser (532 nm) radiation*
- P3.10 M. Uherek, R. Srnanek, L. Vanco, and D. Chorvat (Bratislava, Slovakia)  
*Raman micro-spectroscopy of rat aorta*

**Seminar 4**  
**Physics of Lasers**  
**Thursday, July 18**

---

**Seminar 4.1**

**Chair:** V.B. Morozov (Moscow, Russia)

- 15.10-15.30 4.1.1 J. Cupal, V. Kubeček, M. Jelinek, and M. Vyhlídal (Prague, Czech Republic)  
*High efficiency end-pumped Yb:YAG laser at room and cryogenic temperatures*
- 15.30-15.50 4.1.2 N. Pavel, G. Salamu, and O. Grigore (Bucharest, Romania)  
*Passively Q-switched Nd:YAG/Cr<sup>4+</sup>:YAG lasers with high peak power*
- 15.50-16.10 4.1.3 N. Pavel, G. Salamu, F. Voicu, F. Jipa, and M. Zamfirescu (Bucharest, Romania)  
*Femtosecond-laser inscribed Nd:YAG waveguides. Realization and laser emission*
- 16.10-16.45 **Coffee break**

**Seminar 4.2**

**Chair:** N. Pavel (Bucharest, Romania)

- 16.45-17.05 4.2.1 O. Slezak, A. Lucianetti, M. Sawicka, M. Divoky, and T. Mocek (Prague, Czech Republic)  
*Thermal and stress effects in cryogenically-cooled high-average-power Yb:YAG slab amplifiers*
- 17.05-17.25 4.2.2 A.K. Naumov, O.A. Morozov, A.V. Lovchev, and D.I. Tselischev (Kazan, Russia)  
*Way of stepless regulation laser output by using intracavity device*
- 17.25-17.45 4.2.3 A.A. Ionin, I.O. Kinyaevsky, Yu.M. Klimachev, A.A. Kotkov, and A.Yu. Kozlov (Moscow, Russia)  
*Amplification of nanosecond laser pulses in carbon monoxide laser amplifier*
- 17.45-18.05 4.2.4 A.A. Ionin, A.Yu. Kozlov, L.V. Seleznev, and D.V. Sinitsyn (Moscow, Russia)  
*Compact slab RF-discharge overtone CO laser*
- 18.05-18.25 4.2.5 V.B. Morozov, A.N. Olenin, and D.V. Yakovlev (Moscow, Russia)  
*Synchronization enhancement of high-peak-power electrooptically controlled picosecond lasers*
- 18.25-18.45 4.2.6 M. Sawicka, M. Divoky, A. Lucianetti, and T. Mocek (Prague, Czech Republic)  
*Numerical evaluation of amplified spontaneous emission and heat generation in slab, multi-slab and active mirror laser amplifiers*
- 

**Poster Session, Tuesday, July 16**

**Chair:** M. Darvin (Germany)

- P4.1 D. Braunstein (Beer Sheva, Israel), G.A. Koganov (Eilat, Israel), E. Smolik, Y. Biton, and R. Shuker (Beer Sheva, Israel)  
*Influence of random fluctuating coupling and probe fields on gain without inversion in a ladder scheme*
- P4.2 E. Smolik, D. Braunstein (Beer Sheva, Israel), G.A. Koganov (Eilat, Israel), Y. Biton, and R. Shuker (Beer Sheva, Israel)  
*Gain without inversion in a Lambda scheme subjected to random fluctuating coupling and probe fields*

**Seminar 5**  
**Nonlinear Optics & Spectroscopy**

---

**Monday, July 15**

**Seminar 5.1**

**Chair:** V.A. Makarov (Russia)

- 11.00-11.30 5.1.1 P. Polynkin, M. Scheller, X. Chen, A. Gombojav, M. Kolesik (Tucson, USA), M. Mills, and D. Christodoulides (Orlando, USA)  
*Experiments on two-beam laser filamentation in air*
- 11.30-12.00 5.1.2 V.A. Makarov, I.A. Perezhogin, N.N. Potravkin, K.S. Grigoriev, and G.A. Gryaznov (Moscow, Russia)  
*Linear and nonlinear optical activity for the ultrashort light pulse: beyond the slowly varying envelope approximation*
- 12.00-12.30 5.1.3 E.O. Smetanina (Moscow, Russia), V.M. Kadan, I.V. Blonskyi (Kiev, Ukraine), and V.P. Kandidov (Moscow, Russia)  
*Dynamics of Kerr and plasma lenses in the femtosecond filament*
- 12.30-12.45 5.1.4 V. Trofimov, I. Zakharova, and M. Fedotov (Moscow, Russia)  
*Self-similar shape mode of optical pulse propagation in de-focusing medium with two-photon absorption*

12.45-14.00

**Lunch**

**Seminar 5.2**

**Chair:** P. Polynkin (USA)

- 14.00-14.25 5.2.1 V.A. Makarov, V.M. Petnikova, N.N. Potravkin, and V.V. Shuvalov (Moscow, Russia)  
*Particular periodic and approximate solutions of a system of coupled nonlinear Schrodinger equations for elliptically polarized waves in a medium with local and non-local parts of the cubic nonlinear optical response and second order frequency dispersion*
- 14.25-14.50 5.2.2 V. Shandarov, V. Kruglov, A. Kanshu, E. Koval'chuk (Tomsk, Russia), and F. Chen (Jinan, China)  
*Discrete diffraction of light within optically modulated femtosecond laser-written 1D photonic lattice in lithium niobate*
- 14.50-15.15 5.2.3 V.G. Arakcheev, A.N. Bekin, N.V. Minaev, V.B. Morozov, A.O. Rybaltofski, and Yu.V. Vladimirova (Moscow, Russia)  
*Absorption and coherent anti-Stokes Raman scattering spectroscopy of transparent nanoporous structures with metal nanoparticles inside pores*
- 15.15-15.40 5.2.4 Z. Zeng, C. Gong, J. Jiang, R. Li, and Z. Xu (Shanghai, China)  
*Observation of sub-cycle tunneling ionization dynamics in transparent solids*
- 15.40-16.05 5.2.5 Y. Zheng, C. Gong, Y. Zhong, Z. Zeng, C. Li, X. Ge, R. Li, and Z. Xu (Shanghai, China)  
*Few-cycle infrared laser pulse energy exchange due to filament interaction in air*

16.05-16.45

**Coffee break**

**Seminar 5.3**

**Chair:** I.A. Perezhogin (Russia)

- 16.45-17.10 5.3.1 H.L. Xu (Changchun, China), J.P. Yao, J.L. Ni, W. Chu (Shanghai, China), S.L. Chin (Quebec, Canada), K. Yamanouchi (Tokyo, Japan), Y. Cheng, and Z.Z. Xu (Shanghai, China)  
*Femtosecond filament-induced nitrogen molecular-ion lasers in air*

- 17.10-17.35 5.3.2 M. Zezulová, M. Jelínek, T. Kocourek, V. Vorlíček, and V. Železný (Prague, Czech Republic)  
*Polycrystalline LiNbO<sub>3</sub> thin films characterized by infrared and Raman spectroscopy*
- 17.35-18.00 5.3.3 A. Puiu, S. Botti, S. Almaviva, L. Cantarini, L. Cassioli, S. Grossi, and A. Palucci (Frascati, Italy)  
*Raman spectroscopy and principal component analysis applied to identification of explosive materials*
- 18.00-18.15 5.3.4 D. Hashimoto and K. Shimizu (Kanagawa, Japan)  
*Efficient population manipulation of hyperfine sublevels in  $_{167}\text{Er}^{3+}$  ions doped in an  $\text{Y}_2\text{SiO}_5$  crystal via a phonon transition*
- 18.15-18.30 5.3.5 J. Zhao, Z. Wang, Y. Zhang, and W. Liu (Nankai, China)  
*THz wave guiding by femtosecond laser filament in air*
- 18.30-18.55 5.3.6 P. Wei, J. Miao, Z. Zeng, R. Li, and Z. Xu (Shanghai, China)  
*Highly monochromatic and tunable extreme ultraviolet emission from a single high-order harmonic based on multi-color laser fields*
- 

**Poster Session, Thursday, July 18**

**Chair:** V.G. Arakcheev (Russia)

- P5.1 V.O. Kompanets, A.E. Dokukina, E.O. Smetanina, S.V. Chekalin, and V.P. Kandidov (Moscow, Russia)  
*Filamentation of femtosecond bessel-gauss beams undergoing anomalous group-velocity dispersion*
- P5.2 F. Moslehirad, M.H. Majlesara, and M.J. Torkamany (Qazvin, Iran)  
*Synthesis of composite Au/TiO<sub>2</sub> nanoparticles through pulsed laser ablation and study of their nonlinear optical properties*
- P5.3 F. Moslehirad, M.H. Majlesara, and M.J. Torkamany (Qazvin, Iran)  
*Nonlinear optical properties of composite Au/TiO<sub>2</sub> nanoparticles prepared through pulsed laser ablation*
- P5.4 W. Aslam Farooq, S. Mansoor Ali, L.E. Al-Otibi, A.S. Al-Dwayyan (Riyadh, KSA), and F. Yakuphanoglu (Elasiz, Turkey)  
*Laser irradiation effect on structure and optical properties of Cd<sub>1-x</sub>Ni<sub>x</sub>O thin film*
- P5.5 E. Kanetsyan (Yerevan, Armenia)  
*Ultraviolet generation by two photon optical pumping in alkali metal vapours*

**Seminar 6**  
**Physics of Cold Trapped Atoms**

---

**Monday, July 15**

**Seminar 6.1**

**Chairs:** V.S. Bagnato (Brazil) and M. Tsubota (Japan)

- 11.00-11.25 6.1.1 M. Ueda (Tokyo, Japan)  
*Spinor Beliaev theory and first-order phase transition in spinor condensates*
- 11.25-11.50 6.1.2 E. Zaremba (Kingston, Canada), B.P. van Zyl (Antigonish, Canada), and P. Pisarski (Kingston, Canada)  
*Thomas-Fermi von Weizsäcker theory for a harmonically trapped, two-dimensional, spin-polarized dipolar Fermi gas*
- 11.50-12.15 6.1.3 M. Guilleumas, A. Gallemí, and R. Mayol (Barcelona, Spain)  
*Dipolar Bose-Einstein condensates in triple-well potentials*
- 12.15-12.40 6.1.4 J. Dziarmaga (Kraków, Poland), T. Swislocki, and E. Witkowska (Warsaw, Poland)  
*The Kibble-Zurek mechanism and a conservation law in spinor Bose-Einstein condensates*
- 12.40-14.00 **Lunch**

**Seminar 6.2**

**Chairs:** M. Ueda (Japan) and E. Zaremba (Canada)

- 14.00-14.25 6.2.1 P. Vignolo (Sophia Antipolis, France), M. Larcher, C. Menotti (Povo, Italy), and B. Tanatar (Ankara, Turkey)  
*A metal-insulator transition induced by random dipoles*
- 14.25-14.50 6.2.2 P. Hannaford, S. Jose, P. Surendran, Y. Wang, I. Herrera (Melbourne, Australia), M. Singh (Punjab, India), S. Whitlock (Heidelberg, Germany), R. McLean, and A. Sidorov (Melbourne, Australia)  
*Magnetic lattices for simulating condensed matter phenomena*
- 14.50-15.15 6.2.3 V.A. Yurovsky (Tel Aviv, Israel)  
*Properties of quasi-one-dimensional cold gases in well-defined spin states*
- 15.15-15.40 6.2.4 M. Yamashita, K. Inaba (Kanagawa and Tokyo, Japan), and H. Tsuchiura (Sendai, Japan)  
*Collapse and revival dynamics of spin-1 bosons in optical lattices*
- 15.40-16.05 6.2.5 T. Kimura (Kanagawa, Japan)  
*Phase diagram of spin-1 bosons in an optical lattice: a strong-coupling study*
- 16.10-16.45 **Coffee break**

**Seminar 6.3**

**Chairs:** M. Yamashita (Japan) and K. Ziegler (Germany)

- 16.45-17.10 6.3.1 M. Brewczyk (Białystok and Warsaw, Poland), T. Świsłocki, and M. Gajda (Warsaw, Poland)  
*Resonant dynamics of chromium condensates*
- 17.10-17.35 6.3.2 K. Sakmann (Heidelberg, Germany and Stanford, USA), A.I. Streltsov (Heidelberg, Germany), O.E. Alon (Tivon, Israel), and L.S. Cederbaum (Heidelberg, Germany)  
*Universality of fragmentation in the Schrödinger dynamics of bosonic Josephson junctions*
- 17.35-18.00 6.3.3 A. Sinatra, Y. Castin (Paris, France), and E. Witkowska (Warsaw, Poland)  
*Limit of spin squeezing in trapped Bose-Einstein condensates*

- 18.00-18.20 6.3.4 N.G. Parker (Newcastle upon Tyne, UK), B.C. Mulkerin (Victoria, Australia), R.M.W. van Bijnen (Eindhoven, The Netherlands), D.H.J. O'Dell (Hamilton, Canada), and A.M. Martin (Victoria, Australia)  
*Vortices and their interactions in a two-dimensional dipolar Bose gas*
- 18.20-18.40 6.3.5 M. Schlosser, S. Tichelmann, M. Hambach, and G. Birkel (Darmstadt, Germany)  
*A two-dimensional multi-site quantum register of single neutral atoms*
- 

**Tuesday, July 16**

**Seminar 6.4**

**Chairs:** W. Belzig (Germany) and B. Wu (China)

- 11.00-11.25 6.4.1 L. Salasnich (Padova, Italy)  
*Fermionic condensation in ultracold atoms, nuclear matter and neutron stars*
- 11.25-11.50 6.4.2 J. Tempere, S.N. Klimin, and J.T. Devreese (Antwerpen, Belgium)  
*Two-bandgap superfluidity in atomic Fermi systems*
- 11.50-12.15 6.4.3 C.A.R. Sa de Melo (Atlanta, USA)  
*Parity violating superfluidity in ultra-cold fermions under the influence of artificial non-Abelian gauge fields*
- 12.15-12.40 6.4.4 A. Trombettoni (Trieste, Italy)  
*Relative phase and Josephson dynamics between weakly coupled ultracold Fermi systems*

12.40-14.00

**Lunch**

**Seminar 6.5**

**Chairs:** L. Salasnich (Italy) and J. Tempere (Belgium)

- 14.00-14.25 6.5.1 P.D. Drummond and L.E.C. Rosales-Zarate (Melbourne, Australia)  
*Q-function and identity resolution for fermions*
- 14.25-14.50 6.5.2 M.A. Baranov (Innsbruck, Austria and Moscow, Russia), Ch.V. Kraus, and P. Zoller (Innsbruck, Austria)  
*Majorana fermions in atomic wire networks and topologically protected realization of the Deutsch-Josza algorithm*
- 14.50-15.15 6.5.3 J. Brand and A. Cetoli (Auckland, New Zealand)  
*Dark solitons in superfluid Fermi gases: Dispersion relation and snaking instability*
- 15.15-15.40 6.5.4 W. Zhang (Beijing, China)  
*Exotic superfluid in a two-dimensional Fermi gas with spin-orbit coupling*
- 15.40-16.05 6.5.5 T. Yefsah, A.T. Sommer, M.J.H. Ku, L.W. Cheuk, W. Ji, W.S. Bakr, and M.W. Zwierlein (Cambridge, USA)  
*Heavy solitons in a fermionic superfluid*
- 16.10-16.45

**Coffee break**

**Seminar 6.6**

**Chairs:** P. Drummond (Australia) and C.A.R. Sa de Melo (USA)

- 16.45-17.10 6.6.1 A. Minguzzi (Grenoble, France) and P. Vignolo (Nice, France)  
*Universal contact of a Tonks-Girardeau gas at finite temperature*
- 17.10-17.35 6.6.2 V. Melezhik (Dubna, Russia)  
*Resonances in ultracold collisions confined by atomic traps*
- 17.35-18.00 6.6.3 A. Simon and J.-M. Launay (Rennes, France)  
*Reactive and non-reactive polar molecule collisions in optical waveguides*



- 18.00-18.20 6.6.4 M. Urban (Orsay, France), S. Chiacchiera (Coimbra, Portugal), P.-A. Pantel, and D. Davesne (Villeurbanne, France)  
*Collective modes of three- and two-dimensional trapped Fermi gases in the normal phase*
- 18.20 -18.40 6.6.5 C. Trefzger and Y. Castin (Paris, France)  
*Polaron residue and spatial structure in a Fermi gas*
- 

**Wednesday, July 17**

**Seminar 6.7**

**Chairs:** J. Brand (New Zealand) and Y. Castin (France)

- 11.00-11.25 6.7.1 N. Davidson, J. Coslovksy, I. Almog, and Y. Sagi (Rehovot, Israel)  
*Characterizing the softness of cold collisions using spectroscopy*
- 11.25-11.50 6.7.2 V.S. Bagnato (São Carlos, Brazil)  
*Total energy spectrum for a turbulent trapped quantum fluid*
- 11.50-12.15 6.7.3 W. von Klitzing, V. Bolpasi, N.K. Efremidis (Heraklion, Greece), M.J. Morrissey (Durban, South Africa), P. Condylys, D. Sahagun (Singapore, Singapore), and M. Baker (Brisbane, Australia)  
*An ultra-bright atom-laser*
- 12.15-12.40 6.7.4 M. Holzmann (Paris and Grenoble, France)  
*Superfluid and transport properties of dirty bosons in two dimensions*
- 12.40-14.00 **Lunch**

**Seminar 6.8**

**Chairs:** M. Holzmann (France) and W. von Klitzing (Greece)

- 14.00-14.25 6.8.1 N.P. Proukakis, R.W. Pattinson, N.G. Parker (Newcastle upon Tyne, UK), I.-K. Liu S.-C. Gou (Changhua, Taiwan), S.A. Gardiner, D.J. McCarron, H.W. Cho, S.L. Cornish (Durham, UK), and T.P. Billam (Otago, New Zealand)  
*Competing kinetics and stochastic phase separation of trapped two-component condensates*
- 14.25-14.50 6.8.2 A. Gammal (São Paulo, Brazil) and E.G. Khamis (São Paulo, Brazil and Loughborough, UK)  
*Supersonic flow of a Bose-Einstein condensate past an oscillating attractive-repulsive obstacle*
- 14.50-15.15 6.8.3 O.E. Alon (Tivon, Israel), A.U.J. Lode (Heidelberg, Germany), K. Sakmann (Stanford, USA), A.I. Streltsov (Heidelberg, Germany), I. Březinová, J. Burgdörfer (Vienna, Austria), and L.S. Cederbaum (Heidelberg, Germany)  
*Many-body decay by tunnelling and wave chaos in a BEC*
- 15.15-15.40 6.8.4 D.S. Petrov (Orsay, France), V. Lebedev, and J.T.M. Walraven (Amsterdam, The Netherlands)  
*Controlling integrability in a quasi-1D atom-dimer mixture*
- 15.40-16.05 6.8.5 I. Ferrier-Barbut, B.S. Rem, A.T. Grier, U. Eismann, T. Langen, N. Navon, L. Khaykovich, F. Werner, D.S. Petrov, F. Chevy, and C. Salomon (Paris, France)  
*Lifetime of the strongly interacting Bose gas*
- 16.10-16.45 **Coffee break**

## Seminar 6.9

**Chairs:** N. Proukakis (UK) and L. Sanchez-Palencia (France)

- 16.45-17.10 6.9.1 B. Wu (Beijing, China)  
*Quantum equilibrium state with multiple temperatures*
- 17.10-17.35 6.9.2 W. Belzig, M. Bruderer (Konstanz, Germany), and  
A. Posazhennikova (Egham, UK and Konstanz, Germany)  
*Entanglement generation in a system of two atomic quantum dots coupled  
to a pool of interacting bosons*
- 17.35-18.00 6.9.3 S. Safaei (Ankara, Turkey), Ö.E. Müstecaplıoğlu (Istanbul, Turkey),  
and B. Tanatar (Ankara, Turkey)  
*Interplay of self-organization and multistability in the formation of spin  
domains in a Bose Einstein condensate-cavity system with Raman coupling*
- 18.00-18.20 6.9.4 E. Kaminishi, J. Sato, and T. Deguchi (Tokyo, Japan)  
*Evaluation of recurrence time for a localized many-body state dynamics in  
the 1D Bose gas*
- 18.20-18.40 6.9.5 L. Pruvost, C. Cabrera, V. Carrat, M. Jacquy (Orsay, France),  
J.W.R. Tabosa (Recife, Brazil), and B.V. de Leseugno (Orsay, France)  
*Highly collimated source of cold Rb atoms from a 2-dimensional magneto-  
optical trap*
- 

## Thursday, July 18

### Seminar 6.10

**Chairs:** S. Adhikari (Brazil) and J. Zakrzewski (Poland)

- 11.00-11.25 6.10.1 G.V. Shlyapnikov (Orsay, France)  
*Localization-delocalization transition of finite-temperature bosons in the  
1D quasi-periodic potential*
- 11.25-11.50 6.10.2 L. Sanchez-Palencia (Palaiseau, France)  
*Many-body Anderson localization in weakly-interacting Bose fluids*
- 11.50-12.15 6.10.3 J. Radic and V. Galitski (College Park, USA)  
*Exotic quantum spin models in spin-orbit-coupled Mott insulators*
- 12.15-12.40 6.10.4 G. Pupillo (Strasbourg, France), F. Cinti, T. Macri (Dresden,  
Germany), W. Lechner (Innsbruck, Austria), and T. Pohl (Dresden, Germany)  
*An Andreev-Lifshitz-type supersolid with soft-core bosons*
- 12.40-14.00 **Lunch**

### Seminar 6.11

**Chairs:** O. Alon (Israel) and Yu. Lozovik (Russia)

- 14.00-14.25 6.11.1 B. Svistunov (Amherst, USA), L. Pollet (Munich, Germany), and  
N. Prokof'ev (Amherst, USA)  
*Classical-field renormalization flow of one-dimensional disordered bosons*
- 14.25-14.50 6.11.2 T. Bourdel, B. Allard, T. Plisson (Palaiseau, France), M. Holzmann  
(Paris and Grenoble, France), G. Salomon, L. Fouché, P. Wang, A. Aspect  
(Palaiseau, France), and P. Bouyer (Talence, France)  
*Effect of disorder in two-dimensional Bose gases*
- 14.50-15.15 6.11.3 N. Dupuis (Paris, France), A. Rançon (Chicago, USA), and  
P. Lecheminant (Cergy-Pontoise, France)  
*XY quantum criticality of a Bose as in an optical lattice*
- 15.15-15.40 6.11.4 Y. Castin and F. Werner (Paris, France)  
*Third virial coefficient of the unitary Bose gas*

- 15.40-16.05 6.11.5 A. Pelster (Kaiserslautern, Germany), B. Nikolic (Berlin, Germany), and A. Balaz (Belgrade, Serbia)  
*Dipolar Bose-Einstein condensates in weak anisotropic disorder*
- 16.10-16.45 **Coffee break**
- Seminar 6.12**  
**Chairs:** A. Pelster (Germany) and Ch. Weiss (UK)
- 16.45-17.10 6.12.1 A. Balaz (Belgrade, Serbia), R.K. Kumar (Tamil Nadu, India), L.E. Young (São Paulo, Brazil), D. Vudragovi (Belgrade, Serbia), P. Muruganandam (Tamil Nadu, India), and S.K. Adhikari (São Paulo, Brazil)  
*Fortran and C programs for numerical simulation of dipolar Bose-Einstein condensates in fully anisotropic traps*
- 17.10-17.35 6.12.2 U. Schneider (Munich and Garching, Germany)  
*Mass transport in homogeneous optical lattices*
- 17.35-18.00 6.12.3 L. Cao, S. Krönke, O. Vendrell, and Peter Schmelcher (Hamburg, Germany)  
*The multi-layer multi-configuration time-dependent Hartree method for bosons*
- 18.00-18.20 6.12.4 A.I. Streltsov (Heidelberg, Germany) and O.I. Streltsova (Dubna, Russia)  
*How shape of inter-particle interaction impacts properties of trapped bosonic system*
- 18.20-18.40 6.12.5 M.A. Efremov (Ulm, Germany and Moscow, Russia), L. Plimak (Ulm, Germany and Berlin, Germany), M.Yu. Ivanov (Berlin, Germany), and W.P. Schleich (Ulm, Germany)  
*Three-body bound states in atomic mixture with resonant p-wave interaction*
- 

### Friday, July 19

#### Seminar 6.13

**Chairs:** N. Davidson (Israel) and V. Yurovsky (Israel)

- 09.00-09.25 6.13.1 J. Zakrzewski and M. Lacki (Krakow, Poland)  
*Fast dynamics for atoms in optical lattices*
- 09.25-09.50 6.13.2 S.K. Adhikari (São Paulo, Brazil)  
*Stability and collapse of fermions in a binary dipolar boson-fermion  $^{164}\text{Dy}$   $^{161}\text{Dy}$  mixture*
- 09.50-10.15 6.13.3 D. Ciampini (Pisa, Italy)  
*Full counting distribution and phase diagram of a strongly interacting Rydberg gas*
- 10.15-10.35 6.13.4 R. Kohlhaas, T. Vanderbruggen, A. Bertoldi, E. Cantin, A. Aspect (Palaiseau, France), A. Landragin (Paris, France), and P. Bouyer (Palaiseau and Talence, France)  
*Feedback control of trapped atomic ensembles*
- 10.35-11.00 **Coffee break**

#### Seminar 6.14

**Chairs:** B. Svistunov (USA) and M. Weitz (Germany)

- 11.00-11.25 6.14.1 Yu.E. Lozovik (Troitsk, Russia)  
*Coupled condensates of photons and excitons*
- 11.25-11.50 6.14.2 E. Sela, V. Fleurov (Tel Aviv, Israel), and A. Rosch (Cologne, Germany)  
*Superfluidity of photons in an optical microcavity*
- 11.50-12.15 6.14.3 L. Fu (Beijing, China)  
*Interaction induced merngence of Dirac points in non-Abelian optical lattices*

12.15-12.40 6.14.4 K. Sacha (Cracow, Poland) and D. Delande (Paris, France)  
*Does quantum dark soliton exist?*

12.40-14.00 **Lunch**

**Seminar 6.15**

**Chairs:** L. Fu (China) and P. Hannaford (Australia)

14.00-14.25 6.15.1 K. Ziegler (Augsburg, Germany)

*Dynamical entanglement in coupled optical cavities*

14.25-14.50 6.15.2 A. Okopińska and P. Kościak (Kielce, Poland)

*Entanglement in harmonically trapped few-boson systems*

14.50-15.15 6.15.3 R. Smith (Cambridge, UK)

*Non-equilibrium and homogeneous Bose gases*

15.15-15.40 6.15.4 Ch. Weiss (Durham, UK), B. Gertjerenken (Oldenburg, Germany),

T.P. Billam (Dunedin, New Zealand), C.L. Blackley, C.R. Le Sueur

(Durham, UK), L. Khaykovich (Ramat-Gan, Israel), and S.L. Cornish

(Durham, UK)

*Entangling two distinguishable matter-wave bright solitons via collisions*

15.40-16.05 6.15.4 V.I. Yukalov (Dubna, Russia), D. Sornette (Zürich, Switzerland),

and E.P. Yukalova (Dubna, Russia)

*Quantum probabilities and entanglement for multimode Bose systems*

16.10-16.45

**Coffee break**

---

**Poster Session, Thursday, July 18**

**Chair:** V.I. Yukalov (Russia)

P6.1 H. Al-Jibbouri (Berlin, Germany) and A. Pelster (Kaiserslautern, Germany)

*Breakdown of Kohn theorem near Feshbach resonance*

P6.2 A.K. Ardabili, T. Dereli, and Ö.E. Müstecaplıoğlu (Istanbul, Turkey)

*$Z_2$  topological insulator of ultra cold atoms in bichromatic optical lattices*

P6.3 P. Capuzzi, H.M. Cataldo, and D.M. Jezek (Buenos Aires, Argentina)

*Effective interaction in the two-mode model*

P6.4 D.M. Jezek, H.M. Cataldo, and P. Capuzzi (Buenos Aires, Argentina)

*Discrete Gross-Pitaevskii dynamics in four-well systems*

P6.5 D. Ivanov and T. Ivanova (Saint-Petersburg, Russia)

*Cavity cooling with non-coherent feedback loop*

P6.6 R. Mayol, M. Gallemi, and M. Guilleumas (Barcelona, Spain)

*Dipolar drag in non-overlapping dipolar Bose-Einstein condensates*

P6.7 P. Muruganandam and R.K. Kumar (Tiruchirappalli, India)

*Numerical studies on vortices in dipolar Bose-Einstein condensates*

P6.8 B. Nikolic (Berlin, Germany), A. Balaz (Belgrade, Serbia), and A. Pelster

(Kaiserslautern, Germany)

*Dipolar Bose-Einstein condensates with periodically modulated contact*

*interaction*

P6.9 A.N. Novikov and V.O. Nesterenko (Dubna, Russia)

*Nonlinear 3D transport of Bose-Einstein condensate in a double-well trap*

P6.10 R.P. Teles, V.S. Bagnato, and F.E.A. dos Santos (São Carlos, Brazil)

*Coupling the vortex dynamics in the collective excitations of Bose-Einstein condensates*

P6.11 T. Wang (Harbin, China), X.-F. Zhang, A. Pelster, and S. Eggert

(Kaiserslautern, Germany)

*Anisotropic superfluidity of bosons in optical Kagome superlattice*

- P6.12 Ch. Weiss (Durham, UK) and B. Gertjerenken (Oldenburg, Germany)  
*Differences between mean-field dynamics and many-particle quantum dynamics in BECs*
- P6.13 L.E. Young-Silva and S.K. Adhikari (São Paulo, Brazil)  
*Mixing, demixing, and structure formation in a binary dipolar Bose-Einstein condensate*

**Seminar 7**  
**Quantum Information and Quantum Computation**  

---

**Monday, July 15**

**Seminar 7.1**

**Chair:** N. Treps (France)

- 11.00-11.15 7.1.1 U. Andersen, A. Laghaout (Lyngby, Denmark), G. Björk (Stockholm, Sweden), and T. Ralph (Queensland, Australia)  
*High fidelity continuous variable teleportation*
- 11.20-11.35 7.1.2 M. Mičuda, M. Sedlák, I. Straka, M. Miková, M. Dušek, M. Ježek, and J. Fiurášek (Olomouc, Czech Republic)  
*Efficient experimental characterization of linear optical quantum toffoli gate*
- 11.40-11.55 7.1.3 P.H.S. Ribeiro (Rio de Janeiro, Brazil)  
*Quantum simulation with paraxial light beams and the quantum-to-classical transition*
- 12.00-12.15 7.1.4 S. Olivares (Milan, Italy), I.P. Degiovanni, I. Ruo Berchera, and M. Genovese (Turin, Italy)  
*Testing quantum gravity by quantum light*
- 12.20-12.40 7.1.5 I. Almog, G. Loewenthal, J. Coslovsky, Y. Sagi, and N. Davidson (Rehovot, Israel)  
*Optimal dynamical decoupling in the presence of control noise*
- 12.45-14.00 **Lunch**

**Seminar 7.2**

**Chair:** G. Björk (Sweden)

- 14.00-14.15 7.2.1 R. Keil, M. Gräfe, M. Heinrich, S. Nolte, A. Szameit, (Jena, Germany), K. Poullos, D. Fry, J.D.A. Meinecke, J.C.F. Matthews, A. Politi, and J.L. O'Brien (Bristol, UK)  
*Two-dimensional integrated quantum walks of correlated photon pairs*
- 14.20-14.35 7.2.2 N. Walk, T. Symul, P.K. Lam, and T.C. Ralph (Canberra, Australia)  
*Unconditional security of Gaussian post-selected continuous variable quantum key distribution and measurement-based entanglement distillation*
- 14.40-14.55 7.2.3 K. Shimizu, K. Tamaki (Kanagawa, Japan), T. Honjo, M. Fujiwara, T. Ito, S. Miki, T. Yamashita, H. Terai, Z. Wang, and M. Sasaki (Tokyo, Japan)  
*Performance of a long-distance quantum key distribution in the field environment of 90-km optical links installed in Tokyo metropolitan area*
- 15.00-15.15 7.2.4 V.S. Shchesnovich (Santo André, Brazil), D. Mogilevtsev, A. Mikhalychev (Minsk, Belarus), and N. Korolkova (St Andrews, UK)  
*Deterministic quantum dissipative gadgets can be built from optical fiber couplers*
- 15.20-15.35 7.2.5 J. McLenaghan and F. König (St. Andrews, UK)  
*Negative frequency light emission from solitons in fibers*
- 15.40-15.55 7.2.6 G. Baumgartner, J.T. Kosloski, Goldhar (College Park, USA), F.E. Becerra, J. Fan, and A. Migdall (Gaithersburg, USA)  
*Demonstration of nonorthogonal multi-state discrimination below the standard quantum limit*
- 16.00-16.15 7.2.7 J. Fan and M. Hafezi (Gaithersburg, USA)  
*Observation of photonic edge state in silicon*
- 16.15-16.45 **Coffee break**

### Seminar 7.3

**Chair:** F. De Martini (Italy)

- 16.45-17.05 7.3.1 E.A. Goldschmidt, A. Migdall, S.V. Polyakov (Gaitthersburg, USA), F. Piacentini, G. Brida, I.P. Degiovanni, M. Genovese, and I. Ruo Berchera (Turin, Italy)  
*Classical and quantum light source mode analysis with multiphoton statistics*
- 17.10-17.30 7.3.2 C. Marquardt, B. Heim, C. Peuntinger, C. Wittmann, and G. Leuchs (Erlangen, Germany)  
*Free space quantum communication with continuous variables of light*
- 17.35-17.50 7.3.3 P.S. Michelberger, T.F.M. Champion, D.G. England, M.R. Sprague, J. NunnI, W.S. Kolthammer, X.-M. Jin, M. Barbieri, and I.A. Walmsley (Oxford, UK)  
*Storage of down-converted photons in a room-temperature quantum memory*
- 17.55-18.10 7.3.4 L. Pruvost (Orsay, France), D. Bloch (Villetaneuse, France), R.A. de Oliveira, P.S. Barbosa, D. Felinto, and J.W.R. Tabosa (Recife, Brazil)  
*Storage and non-collinear retrieval of orbital angular momentum of light in cold atoms*
- 18.15-18.30 7.3.5 M. Malik, M. Mirhosseini, R.W. Boyd (New York, USA), M.P.J. Lavery, J. Leach, and M.J. Padgett (Glasgow, UK)  
*Direct measurement of a high-dimensional quantum state in the orbital-angular-momentum basis*
- 

### Tuesday, July 16

### Seminar 7.4

**Chair:** K. Banaszek (Poland)

- 11.00-11.15 7.4.1 G. Björk, J. Söderholm, (Stockholm, Sweden), P. de la Hoz, L.L. Sánchez-Soto (Madrid, Spain), A.B. Klimov (Jalisco, Mexico), C. Kothe, L.S. Madsen, and U.L. Andersen (Lyngby, Denmark)  
*Quantum polarization characterization and tomography*
- 11.20-11.35 7.4.2 M.V. Fedorov (Moscow, Russia)  
*Schmidt modes and entanglement of polarization biphoton qutrits*
- 11.40-11.55 7.4.3 J. Laurat (Paris, France)  
*A reversible quantum memory for qubits encoded in twisted photons*
- 12.00-12.15 7.4.4 J. Roslund, R. Medeiros de Araújo, C. Fabre and N. Treps (Paris, France)  
*Ultrafast Entangled Frequency Combs*
- 12.20-12.40 7.4.5 S. Pádua (Belo Horizonte, Brazil)  
*Measurement of entanglement witnesses and demonstration of concentration protocol in a two-qutrit system*
- 12.45-14.00 **Lunch**

### Seminar 7.5

**Chair:** Y.-H. Kim (Korea)

- 14.00-14.15 7.5.1 P. Mataloni (Rome, Italy)  
*Quantum simulation via integrated photonic technology*
- 14.20-14.35 7.5.2 B. Albrecht, X. Fernandez, P. Farrera, M. Cristiani, H. de Riedmatten (Barcelona, Spain)  
*Waveguide quantum frequency conversion of single photons emitted by atomic quantum memories to telecommunication wavelengths*

- 14.40-14.55 7.5.3 M. Jarzyna, R. Demkowicz-Dobrzanski, and K. Banaszek (Warsaw, Poland)  
*Dephasing in coherent communication with weak light pulses*
- 15.00-15.15 7.5.4 K. Kato (Tokyo, Japan)  
*Quantum discrimination of symmetric and non-symmetric M-ary entangled coherent states*
- 15.20-15.35 7.5.5 M. Markiewicz (Gdansk, Poland), J. Kolodyński (Warsaw, Poland), R. Chaves, J.B. Brask, and A. Acín (Barcelona, Spain)  
*Noisy metrology beyond the standard quantum limit*
- 15.40-15.55 7.5.6 R. Zambrini (Palma de Mallorca, Spain)  
*Bringing spontaneous synchronization into the quantum regime*
- 16.00-16.15 7.5.7 A. Kurcz and J.J. Garcia-Ripoll (Madrid, Spain)  
*Unconventional lattice models with ultrastrong circuit-QED*
- 16.15-16.45 **Coffee break**
- Seminar 7.6**  
**Chair:** P. Mataloni (Italy)
- 16.45-17.05 7.6.1 K. Aungkunsiri, D. Bonneau, J. Carolan, D. Fry, J. Hadden, S. Ho, J. Kennard, S. Knauer, E. Martin-Lopez, J. Meinecke, G. Mendoza, J. Munns, M. Piekarek, K. Poulios, X. Qiang, N. Russell, R. Santagati, A. Santamato, P. Shadbolt, P. Sibson, J. Silverstone, O. Snowdon, N. Tyler, J. Wang, C. Wilkes, S.R. Whittaker, J. Barreto, D. Beggs, X. Cai, P. Jiang, A. Laing, J.C.F. Matthews, G.D. Marshall, A. Peruzzo, X.-Q. Zhou, J.G. Rarity, M.G. Thompson, J.L. O'Brien, and collaborators (Bristol, UK)  
*Photonic quantum technologies*
- 17.10-17.30 7.6.2 J. Bae (Singapore, Singapore)  
*Structure of minimum-error quantum state discrimination*
- 17.35-17.50 7.6.3 S. Varró (Budapest, Hungary)  
*Comparison of the Planck, von Neumann and Rényi entropy of a many-particle boson system confined in a harmonic trap*
- 17.55-18.10 7.6.4 B. Brecht, A. Eckstein, and C. Silberhorn (Paderborn, Germany)  
*A quantum pulse gate for time-frequency quantum networks*
- 18.15-18.30 7.6.5 B. Kim and H. Kang (Gwangju, Korea)  
*All-optical image switching in a double-A system*

---

### Wednesday, July 17

#### Seminar 7.7

**Chair:** J. Torres (Spain)

- 11.00-11.15 7.7.1 Y.-H. Kim (Pohang, Korea)  
*Nonmonotonic quantum-to-classical transition in multiparticle interference*
- 11.20-11.35 7.7.2 G.S. Agarwal (Stillwater, USA)  
*Entanglement holes and teleportation of nonclassical non Gaussian cat states*
- 11.40-11.55 7.7.3 S. Berg-Johansen, I. Rigas, C. Gabriel, A. Aiello, P. van Loock, U.L. Andersen, C. Marquardt, and G. Leuchs (Erlangen, Germany)  
*Cluster states from cylindrically polarized modes of light*
- 12.00-12.15 7.7.4 S. Olivares, S. Cialdi, F. Castelli, and M.G.A. Paris (Milano, Italy)  
*Homodyne receiver for optimal phase estimation and communication*
- 12.20-12.40 7.7.5 R. Horodecki (Gdansk, Poland)  
*Objectivity through state broadcasting*
- 12.45-14.00 **Lunch**



## Seminar 7.8

**Chair:** M. Chekhova (Germany)

- 14.00-14.15 7.8.1 K. Nakata, A. Tomita, and A. Okamoto (Sapporo, Japan)  
*A proposal of an entangler for a photon qubit to a superconductor qubit with a semiconductor quantum dot*
- 14.20-14.35 7.8.2 A. Valles, M. Hendrych, J. Svozilik, R. Machulka, P. Abolghasem, D. Kang, B.J. Bijlani, A.S. Helmy, and J.P. Torres (Barcelona, Spain)  
*Entanglement generation in semiconductor Bragg reflection waveguides: challenges and opportunities*
- 14.40-14.55 7.8.3 K. Laiho, A. Christ, R. Kruse, F. Katzschmann, A. Schreiber, S. Leineweber (Paderborn, Germany), K.N. Cassemiro, A. Eckstein, C. Silberhorn (Erlangen, Germany), A. G'abris, C.S. Hamilton, I. Jex (Praha, Czech Republic), T. Guentner, B. Pressl, M. Covi and G. Weihs (Innsbruck, Austria)  
*Waveguided photonic sources for quantum networks*
- 15.00-15.15 7.8.4 D. Strekalov, M. Förtsch, G. Schunk, J. Fürst, C. Wittmann, A. Aiello, C. Silberhorn, C. Marquardt, and G. Leuchs (Erlangen, Germany)  
*Tunable narrow-band photon pairs for quantum information processing*
- 15.20-15.35 7.8.5 P. Schindler, T. Monz, D. Nigg, J.T. Barreiro, E. Martinez, M. Brandl, M. Chwalla, M. Hennrich, and R. Blatt (Innsbruck, Austria)  
*Quantum error correction with trapped Calcium ions*
- 15.40-15.55 7.8.6 J. Howell, G. Howland, J. Schneeloch, and D. Lum (Rochester, USA)  
*Entropy, information and compressive sensing in the quantum domain*
- 16.00-16.15 7.8.7 D.A. Kalashnikov, A.I. Kuznetsov, Z. Pan, and L.A. Krivitsky (Singapore, Singapore)  
*Plasmon resonance in the array of nanoparticles measured by biphoton spectroscopy*
- 16.15-16.45 **Coffee break**

## Seminar 7.9

**Chair:** P. Tombesi (Italy)

- 16.45-17.05 7.9.1 Y. Kurochkin (Moscow, Russia), A.S. Prasad, and A.I. Lvovsky (Calgary, Canada)  
*Distillation of the two-mode squeezed state*
- 17.10-17.30 7.9.2 S. Ghose (Waterloo, Canada)  
*Signatures of chaos in quantum correlations and measurement*
- 17.35-17.55 7.9.3 R. Filip, P. Marek, and A. Furusawa (Olomouc, Czech Republic)  
*Towards deterministic cubic quantum nonlinearity on propagating beam of light*
- 

**Thursday, July 18**

## Seminar 7.10

**Chair:** C. Monken (Brazil)

- 11.00-11.15 7.10.1 I. Capraro, D. Bacco, A. Dall'Arche, D. Marangon, F. Gerlin, A. Tomaello, G. Vallone, and P. Villoresi (Padova, Italy)  
*Quantum communications with strong turbulent*
- 11.20-11.35 7.10.2 F. Daneshgaran (Los Angeles, USA), M. Mondin, and I. Bari (Turin, Italy)  
*Soft-metric based decision in QKD and Poisson photon channels*
- 11.40-11.55 7.10.3 P. Tombesi (Camerino, Italy)  
*Entangling far distant microwave resonators with local optical certification*

- 12.00-12.15 7.10.4 A. Rubenok, J.A. Slater, P. Chan, I. Lucio Martínez, and W. Tittel (Calgary, Canada)  
*Real-world Bell-state measurement and proof-of-principle demonstration of quantum key distribution immune to detector attacks over deployed optical fiber*
- 12.20-12.40 7.10.5 C. Macchiavello (Pavia, Italy)  
*Quantum hypergraph states*
- 12.45-14.00 **Lunch**
- Seminar 7.11**  
**Chair:** A. Lvovsky (Canada)
- 14.00-14.15 7.11.1 L.C. Kwek (Singapore, Singapore)  
*Protecting quantum information with operator quantum Zeno effect*
- 14.20-14.35 7.11.2 C. Bernhard, B. Bessire, T. Feurer, and A. Stefanov (Bern, Switzerland)  
*Characterization and manipulation of energy entangled qubits*
- 14.40-14.55 7.11.3 C. Monken (Belo Horizonte, Brazil)  
*Spontaneous parametric down-conversion in the photon wavefunction approach*
- 15.00-15.15 7.11.4 A. U'Ren (Mexico city, Mexico)  
*Generation of spatially-structured heralded single photons*
- 15.20-15.35 7.11.5 N. Korolkova, N. Quinn (St. Andrew, UK), C.L. Mišta (Olomouc, Czech Republic), C. Peuntinger, V. Chille, C. Marquardt, and G. Leuchs (Erlangen, Germany)  
*Quantumness of Gaussian discord: experimental evidence and role of dissipation*
- 15.40-15.55 7.11.6 V.I. Yukalov (Dubna, Russia) and D. Sornette (Zurich, Switzerland)  
*Quantum probabilities in quantum information processing*
- 16.00-16.15 7.11.7 M. Abdel-Aty (Sakhaïr, Bahrain)  
*Geometric phase and quantum control using nonomechanical resonators*
- 16.15-16.45 **Coffee break**
- Seminar 7.12**  
**Chair:** C.-H. Oh (Singapore)
- 16.45-17.05 7.12.1 F. Sciarrino (Rome, Italy)  
*3D Quantum integrated photonics*
- 17.10-17.30 7.12.2 T. Coudreau, P. Milman (Paris, France), F. Kaiser, D.B. Ostrowsky, and S. Tanzilli (Nice, France)  
*A quantum delayed-choice experiment enabled by entanglement*
- 17.35-17.50 7.12.3 G. Guccione, M. Hosseini, B.C. Buchler, and P.K. Lam (Canberra, Australia)  
*Scattering-free optical levitation of a cavity mirror using an optical spring*
- 17.55-18.10 7.12.4 M. Giudici, M. Marconi, P. Genevet, S. Barland, and J. Tredecce (Valbonne, France)  
*Dissipative solitons in coupled semiconductor micro-resonators*
- 18.15-18.30 7.12.5 M. Hosseini, G. Guccione, B. Buchler, and P.K. Lam (Canberra, Australia)  
*Scattering-assisted cooling of metallic nanorods*

---

**Friday, July 19**

**Seminar 7.13**

**Chair:** L.C. Kwek (Singapore)

- 10.15-10.35 7.13.1 T. Ono, R. Okamoto, and S. Takeuchi (Sapporo, Japan)  
*Application of quantum metrology using photons*

- 10.40-11.00 7.13.2 S. Maniscalco, B. Bylicka, and D. Chruscinski (Edinburgh, UK)  
*Non-Markovianity as a resource for quantum technologies*
- 11.05-11.25 7.13.3 M. Ježek, R. Filip (Olomouc, Czech Republic), G.S. Solomon  
(Gaithersburg, USA), A. Predojević, T. Huber, H. Jayakumar, T. Kauten,  
and G. Weihs (Innsbruck, Austria)  
*Single quantum dots as photon pair emitters*
- 11.30-11.50 7.13.4 L. Plimak, O. Smirnova, M. Ivanov (Berlin, Germany), and  
S. Stenholm (Ulm, Germany)  
*The classically behaving quantum systems*
- 11.55-12.15 7.13.5 M. Genovese (Turin, Italy)  
*The time as an emergent property of quantum mechanics: an experimental  
approach*
- 12.20-12.40 7.13.6 D.G. Angelakis (Chania, Crete)  
*Quantum simulations with photons: the path from Mott transitions to  
interacting relativistic theories with light*
- 12.45-14.00 **Lunch**
- Seminar 7.14**  
**Chair:** G. Leuchs (Germany)
- 14.00-14.20 7.14.1 G. Leuchs, C.R. Müller, C. Marquardt, J. Bergou, and  
U.L. Andersen (Erlangen, Germany)  
*Quantum state discrimination in the continuous variable regime*
- 14.25-14.45 7.14.2 D. Kaszlikowski (Singapore, Singapore)  
*Emergence of macroscopic classicality from microscopic correlations*
- 14.50-15.10 7.14.3 S. Yu and C.H. Oh (Singapore, Singapore)  
*Robertson-Schrodinger uncertainty relation and skew information*
- 15.15-15.35 7.14.4 Y. Miyamoto (Chofu, Japan)  
*Anharmonicity in the detection of orbital angular momentum entangled  
photon pairs and photon counting holography*
- 15.40-15.55 7.14.5 N.M.T. Houluby (Cambridge, UK), K.S. Kravtsov, S.S. Straupe,  
I.V. Radchenko, and S.P. Kulik (Moscow, Russia)  
*Experimental realization of Bayesian adaptive quantum state tomography*
- 16.00-16.15 7.14.6 P. Horodecki (Gdansk, Poland)  
*Quantum correlations beyond entanglement - aspects of communication  
power and its limitations*
- 16.15-16.45 **Coffee break**
- Seminar 7.15 Bright Squeezed Vacuum (Special Session)**  
**Chair:** G. Leuchs (Germany)
- 16.45-17.00 7.15.1 M. Stobinska, W. Laskowski, M. Wiesniak, and M. Zukowski  
(Gdansk, Poland)  
*Multi-photon quantum interference with high visibility using multiphoton  
beam splitters*
- 17.05-17.20 7.15.2 M. Zukowski (Gdansk, Poland)  
*Bell inequalities and entanglement indicators for new processes*
- 17.25-17.40 7.15.3 M.V. Chekhova, F. Just, A. Cavanna, and G. Leuchs (Erlangen, Germany)  
*Transverse entanglement of biphotons*
- 17.45-18.00 7.15.4 V.C. Usenko and R. Filip (Olomouc, Czech Republic)  
*Continuous-variable quantum key distribution with multimode bipartite  
entangled states*

- 18.05-18.20 7.15.5 L.V. Gerasimov and D.V. Kupriyanov (St-Petersburg, Russia)  
*Raman scattering under conditions of radiation trapping*
- 18.25-18.40 7.15.6 R. Filip, V. Usenko (Olomouc, Czech Republic), T.Sh. Iskhakov,  
M.V. Chekhova, and G. Leuchs (Erlangen, Germany)  
*Low-noise twin beams*
- 18.45-18.47 S.P. Kulik (Moscow, Russia)  
*Closing remarks*
- 

**Poster Session, Thursday, July 18**

**Chair:** S. Kulik (Russia)

- P7.1 O. Cernotik and J. Fiurášek (Olomouc, Czech Republic)  
*Displacement-enhanced continuous-variable entanglement concentration*
- P7.2 K.G. Katamadze, N.A. Borshchevskaya, A.V. Paterova, I.V. Dyakonov,  
and S.P. Kulik (Moscow, Russia)  
*Biphoton frequency-angular spectrum modification due to angular dispersion*
- P7.3 K.Yu. Spasibko (Moscow, Russia), M. Stobińska (Warsaw, Poland), F. Töppel,  
T.Sh. Iskhakov, M.V. Chekhova, and G. Leuchs (Erlangen, Germany)  
*Interference of macroscopic states of light on a beam-splitter*
- P7.4 I.V. Radchenko, K.S. Kravtsov, S.P. Kulik, and S.N. Molotkov (Moscow, Russia)  
*Relativistic quantum cryptography*

**Seminar 8**  
**Fiber Optics**

---

**Wednesday, July 17**

**Seminar 8.1**

**Chair:** S. Randoux (France)

- 11.00-11.30 8.1.1 E.Y. Zhu, Z. Tang, and L. Qian (Toronto, Canada)  
*The path to entanglement generation in a poled fiber: from second harmonic generation to Type-II SPDC*
- 11.30-12.00 8.1.2 Y. Feng, L. Zhang, J. Hu, and S. Cui (Shanghai, China)  
*Development of fiber-based source for laser guide star*
- 12.00-12.25 8.1.3 P. Navratil, P. Peterka, P. Honzátko, I. Kašik, and V. Kubeček (Prague, Czech Republic)  
*Investigation of two distinct regimes of laser wavelength sweeping in Fabry–Perot fiber lasers at 1:08 and 1:55  $\mu\text{m}$*
- 12.25-12.45 8.1.4 I.A. Lobach, A.B. Khalipskaya, and S.I. Kablukov (Novosibirsk, Russia)  
*Self-sweeping Yb-doped fiber laser as a source for high-resolution characterization of phase-shifted FBGs*
- 12.45-14.00 **Lunch**

**Seminar 8.2**

**Chair:** I. Lobach (Russia)

- 14.00-14.30 8.2.1 S. Randoux, P. Walczak, and P. Suret (Lille, France)  
*Spectral and statistical properties of Raman fiber lasers*
- 14.30-14.55 8.2.2 S.I. Kablukov, E.I. Dontsova, E.A. Zlobina, I.N. Nemov, A.A. Vlasov, and S.A. Babin (Novosibirsk, Russia)  
*LD-pumped Raman fiber laser operating at 980 nm*
- 14.55-15.20 8.2.3 I.D. Vatnik, D.V. Churkin, and S.A. Babin (Novosibirsk, Russia)  
*Random fiber laser based on Rayleigh scattering with ultimate efficiency*
- 15.20-15.45 8.2.4 P. Peterka, P. Honzátko, F. Todorov, M. Písařík, O. Podrazký, and I. Kašik (Prague, Czech Republic)  
*Thulium-doped-fiber based ASE sources with spectrally-flattened spectrum*
- 15.45-16.10 8.2.5 O. Pottiez, B. Ibarra-Escamilla, and E.A. Kuzin (Leon, Puebla, Mexico)  
*Multiple noise-like pulsing of a figure-eight fiber laser*
- 16.10-16.45 **Coffee break**

**Seminar 8.3**

**Chair:** P. Peterka (Czech Republic)

- 16.45-17.05 8.3.1 D. Chernykh, A. Krylov (Moscow, Russia), A. Ogleznev (Perm, Russia), V. Popok, N. Arutunan, A. Pozharov, V. Grebenyukov, E. Obraztsova, and E. Dianov (Moscow, Russia)  
*Bidirectional ultra-short pulse erbium doped fiber ring laser with extremely wide channels' tuning*
- 17.05-17.25 8.3.2 M. Jelinek, V. Kubeček, V. Matějček, I. Kašik, O. Podrazký, and J. Aubrecht (Prague, Czech Republic)  
*High power 1.06 mm picosecond and nanosecond laser pulse delivery*
- 17.25-17.45 8.3.3 S.A. Babin, E.V. Podivilov, D.S. Kharenko, A.E. Bednyakova, M.P. Fedoruk (Novosibirsk, Russia), V.L. Kalashnikov (Vienna, Austria), and A.A. Apolonski (Garching, Germany)  
*Formation of a chirped dissipative soliton – Raman pulse complex in a fiber laser oscillator*

- 17.45-18.05 8.3.4 P. Stajanca, I. Bugar, L. Curilla, M. Michalka (Bratislava, Slovakia), R. Buczynski (Warsaw, Poland), and F. Uherek (Bratislava, Slovakia)  
*Nonlinear transformations of ultrashort pulses in dual-core microstructured optical fiber made of multicomponent glass*
- 18.05-18.25 8.3.5 M. Durán-Sánchez, E.A. Kuzin, O. Pottiez, B. Ibarra-Escamilla, A. González-García, F. Maya-Ordoñez, and R.I. Álvarez-Tamayo (Leon-Puebla-Guanajuato, Mexico)  
*Tunable dual wavelength actively Q-switched Er/Yb double-clad fiber laser*
- 18.25-18.45 8.3.6 A. González-García, B. Ibarra-Escamilla, O. Pottiez, F.M. Maya-Ordoñez, E.A. Kuzin, and M. Duran-Sánchez (Leon- Puebla, Mexico)  
*Wavelength tunable actively Q-switched fiber laser in cw and pulse operation based on a fiber Bragg grating*
- 

#### Thursday, July 18

#### Seminar 8.4

**Chair:** L. Su (China)

- 11.00-11.30 8.4.1 I. Razdobreev, H. El Hamzaoui (Lille, France), V.B. Arion (Vienna, Austria), and M. Bouazaoui (Lille, France)  
*Origins of photoluminescence in Ga(Al)/Bi co-doped silica glasses*
- 11.30-11.55 8.4.2 B.I. Denker, B.I. Galagan, I.L. Shulman, S.E. Sverchkov, and E.M. Dianov (Moscow, Russia)  
*The model bismuth-doped Mg-Al-silicate glass*
- 11.55-12.20 8.4.3 M. Peng (Guangzhou, China)  
*A progress on infrared luminescent Bi doped solids*
- 12.20-12.45 8.4.4 J. Qiu, S. Zhou (Guangzhou, China), G. Bi (Hangzhou, China), and M. Peng (Guangzhou, China)  
*Novel glasses and glass-ceramics for broadband optical amplification*

12.45-14.00

**Lunch**

#### Seminar 8.5

**Chair:** I. Razdobreev (France)

- 14.00-14.30 8.5.1 L. Su, X. Fan, X. Jiang, H. Xing, H. Tang, and J. Xu (Shanghai, China)  
*Ultra-broadband near-infrared luminescence of bismuth-doped CsI single crystals*
- 14.30-14.50 8.5.2 M.A. Melkumov, K.E. Riumkin, I.A. Varfolomeev, A.V. Shubin, I.A. Bufetov, S.V. Firstov (Moscow, Russia), V.F. Khopin, A.N. Guryanov (Nizhny Novgorod, Russia), and E.M. Dianov (Moscow, Russia)  
*Excited state absorption in Bi-doped aluminosilicate fibers with different concentration of active centers*
- 14.50-15.10 8.5.3 A.A. Pynenkov, D.Y. Yerin, K.N. Nishchev (Saransk, Russia), and S.V. Firstov (Moscow, Russia)  
*Synthesis and investigation of spectral and luminescent properties of Bi-doped germanate glass*

**Symposium**  
**Extreme Light Technologies, Science, and Applications**

---

**Monday, July 15**

**Seminar EL.1**

**Chair:** G. Korn (Czech Republic)

- 11.00-11.25 EL.1.1 B.M. Hegelich, T. Ditmire, A. Arefiev (Austin, USA), C. Ridgers (York, UK), and H. Ruhl (München, Germany)  
*Ultra-relativistic electron dynamics, radiation reactions and nonlinear QED on the Texas petawatt laser*
- 11.25-11.50 EL.1.2 T. Toncian, M. Cerchez, A.L. Giesecke, C. Peth, M. Swantusch, M. Toncian, O. Willi (Düsseldorf, Germany), B. Albertazzi, J. Fuchs (Palaiseau, France), E.A. Anashkina, S.A. Skobelev, A.V. Bashinov, A.A. Gonoskov, and A.V. Kim (Nizhny Novgorod, Russia)  
*Short pulse and short wavelength radiation generation by plasma nonlinearities at the Arcturus Laser Laboratory*
- 11.50-12.15 EL.1.3 T. Heinzl (Plymouth, UK)  
*Extreme light photonics*
- 12.15-12.40 EL.1.4 K. Homma (Hiroshima, Japan)  
*Vacuum quantum optics toward search for sub-eV dark matter / dark energy candidates*
- 12.45-14.00 **Lunch**

**Seminar EL.2**

**Chair:** S.V. Popruzhenko (Russia)

- 14.00-14.35 EL.2.1 G. Korn (Prague, Czech Republic)  
*Scientific program and experimental area development at ELI beamlines*
- 14.35-15.10 EL.2.2 B. Le Garrec, G. Korn, and B. Rus (Prague, Czech Republic)  
*ELI beamlines: extreme light infrastructure science and technology with ultra-intense lasers*
- 15.10-15.45 EL.2.3 N.B. Narozhny and A.M. Fedotov (Moscow, Russia)  
*Probing of QED vacuum with superstrong laser field*
- 15.45-16.20 EL.2.4 N.E. Andreev (Moscow, Russia)  
*High energy particles and x-rays under the action of short intense laser pulses*
- 16.15-16.45 **Coffee break**

**Seminar EL.3**

**Chair:** A.M. Fedotov (Russia)

- 16.45-17.10 EL.3.1 D.G. Green and C.N. Harvey (Belfast, UK)  
*Modelling quantum electrodynamics in intense laser fields*
- 17.10-17.35 EL.3.2 A. Di Piazza and F. Mackenroth (Heidelberg, Germany)  
*Nonlinear double Compton scattering in the ultrarelativistic quantum regime*
- 17.35-18.00 EL.3.3 A. Ilderton and G. Torgrimsson (Gothenberg, Sweden)  
*Radiation reaction directly from QED*
- 18.00-18.20 EL.3.4 A. Noble, Y. Kravets, and D. Jaroszynski (Glasgow, UK)  
*Radiation damping of an electron in an intense laser pulse*

---

**Tuesday, July 16**

**Seminar EL.4**

**Chair:** N.E. Andreev (Russia)

- 11.00-11.25 EL.4.1 A.A. Andreev (Berlin, Germany) and K.Yu. Platonov (St. Petersburg, Russia)  
*Generation of fast particles and short wavelength radiation from nano-structure targets irradiated by relativistic intensity laser pulse*
- 11.25-11.50 EL.4.2 A.V. Brantov and V.Yu. Bychenkov (Moscow, Russia)  
*Wide-range analysis of the intensity-dependent optimization of laser-triggered ion acceleration*
- 11.50-12.15 EL.4.3 A. Macchi (Pisa, Italy), A. Sgattoni (Milan, Italy), and F. Pegoraro, (Pisa, Italy)  
*Ion acceleration in the "extreme light" regime*
- 12.15-12.40 EL.4.4 D. Margarone, T. Levato, J. Prokupek, and G. Korn (Prague, Czech Republic)  
*Particle acceleration by ultra-high intensity femtosecond lasers at ELI-beamlines*
- 12.45-14.00 **Lunch**

**Seminar EL.5**

**Chair:** B. Le Garrec (Czech Republic)

- 14.00-14.30 EL.5.1 G.G. Paulus (Jena, Germany)  
*High-definition X-ray polarimetry and the detection of vacuum birefringence*
- 14.30-15.00 EL.5.2 N.N. Rosanov and N.V. Vyssotina (St. Petersburg, Russia)  
*Extremely short dissipative solitons and laser pulses on a basis of self-induced transparency in active-passive schemes*
- 15.00-15.25 EL.5.3 A. Ionin, L. Seleznev, and E. Sunchugasheva (Moscow, Russia)  
*Control of plasma channel parameters at filamentation of femtosecond laser pulses*
- 15.25-15.50 EL.5.4 G. Lehmann and K.H. Spatschek (Düsseldorf, Germany)  
*Self-similar laser pulse amplification via strongly coupled Brillouin scattering in plasma*
- 15.50-16.15 EL.5.5 S.N. Bagaev, V.I. Trunov, E.V. Pestryakov, S.A. Frolov, V.E. Leschenko, and A.E. Kokh (Novosibirsk, Russia)  
*10 PW channel for ultraintensive coherent beams combining system*
- 16.15-16.45 **Coffee break**

**Seminar EL.6**

**Chair:** G.G. Paulus (Germany)

- 16.45-17.15 EL.6.1 B. Erk, D. Rolles, R. Boll, L. Foucar, D. Anielski, B. Rudek, S.W. Epp (Hamburg, Germany), M. Cryle (Heidelberg, Germany), C. Bostedt, R. Coffee, K.R. Fergusson, S. Schorb, M. Swiggers, J. Bozek (CA, USA), T. Marchenko, M. Simon (Paris, France), S. Trippel, J. Küpper (Hamburg, Germany), S. Wada (Higashi-Hiroshima, Japan), K. Ueda (Sendai, Japan), R. Moshhammer (Heidelberg, Germany), I. Schlichting, J. Ullrich, and A. Rudenko (Hamburg, Germany)  
*Charge transfer processes in dissociating molecules upon core-shell photoionization*



- 17.15-17.35 EL.6.2 K.Z. Hatsagortsyan, M. Klaiber, E. Yakaboylu (Heidelberg, Germany), C. Müller (Düsseldorf, Germany), H. Bauke (Heidelberg, Germany), and G.G. Paulus (Jena, Germany)  
*Spin effects in relativistic ionization with highly charged ions in super-strong laser fields*
- 17.35-17.55 EL.6.3 H.R. Reiss (Berlin, Germany)  
*Relativistically strong laser fields do not cause tunneling processes*
- 17.55-18.15 EL.6.4 V.D. Zvorykin, A.A. Ionin, A.O. Levchenko, L.V. Seleznev, D.V. Sinitsyn, I.V. Smetanin, N.N. Ustinovskii, and A.V. Shutov (Moscow, Russia)  
*Air ionization by UV picosecond subTW laser pulses combined with 100 ns GW pulse at GARPUN-MTW Ti:Sapphire/KrF laser facility*
- 

### Wednesday, July 17

#### Seminar EL.7

**Chair:** I.Yu. Kostyukov (Russia)

- 11.00-11.30 EL.7.1 J.G. Kirk, T. Blackburn, C.P. Ridgers, and A.R. Bell (Heidelberg, Germany)  
*Radiation reaction and electron-positron pair production in laser-electron beam collisions*
- 11.30-11.55 EL.7.2 K. Klier and H. Ruhl (München, Germany)  
*Direct light acceleration of electrons and positrons in ultra-intense electromagnetic fields*
- 11.55-12.20 EL.7.3 A. Timokhin (Greenbelt, USA)  
*Electromagnetically driven electron-positron cascades in astrophysics*
- 12.20-12.45 EL.7.4 N. Elkina and H. Ruhl (München, Germany)  
*Assessment of an adaptive particle-mesh method for simulation of laser driven electron-positron cascades*
- 12.45-14.00 **Lunch**

#### Seminar EL.8

**Chair:** H. Ruhl (Germany)

- 14.00-14.30 EL.8.1 O. Willi (Düsseldorf, Germany)  
*Acceleration and applications of intense proton pulses driven by ultra-short laser pulses*
- 14.30-15.00 EL.8.3 I.Yu. Kostyukov and E.N. Nerush (Nizhny Novgorod, Russia)  
*Gamma-ray generation in laser-solid interaction at intensities above  $10^{23}$  W/cm<sup>2</sup>*
- 15.00-15.25 EL.8.2 A.V. Kim and A.V. Bashinov (Nizhny Novgorod, Russia)  
*nonlinear electrodynamic models of ultra-relativistic laser-plasma interactions due to radiation reaction effects: efficient nano-foil converter into gamma-rays*
- 15.25-15.50 EL.8.4 X.Q. Yan, C. Lin, H.Y. Lu, H.Y. Wang, B. Liu, Y.R. Lu, X.T. He, and C.E. Chen (Beijing, China)  
*Laser driven plasma lens for pulse shaping/cleaning and ion acceleration*
- 15.50-16.15 EL.8.5 C. Matei, C. Popa, A.-M. Bratu, M. Patachia, S. Banita, M. Petrus, I. Ivascu, and D. Dumitras (Magurele-Bucharest, Romania)  
*Feasibility of radiobiological studies at Romanian TEWALAS and CETAL Laser Facilities*
- 16.15-16.45 **Coffee break**

## Seminar EL.9

**Chair:** L. Seleznev (Russia)

- 16.45-17.10 EL.9.1 J. Novak, P. Bakule, J.T. Green, F. Batysta, and B. Rus (Prague, Czech Republic)  
*Thin disk picosecond pump laser for broadband OPCPA at a 1 kHz repetition rate*
- 17.10-17.35 EL.9.2 J.T. Green, J.A. Naylor, T. Mazanec, P. Bakule, and B. Rus (Prague, Czech Republic)  
*Fiber-based front end for 100 J Yb:YAG multi-slab amplifier*
- 17.35-18.00 EL.9.3 R. Zeipl, M. Jelinek, J. Navrátil, T. Kocourek, S. Leshkov, J. Vaniš, and J. Walachová (Prague, Czech Republic)  
*Properties of thermoelectric multi-layered structures  $Ce_{0.09}Fe_{0.67}Co_{3.33}Sb_{12}/FeSb_{2.1}Te$  prepared by laser ablation*
- 

**Thursday, July 18**

## Seminar EL.10

**Chair:** N.B. Narozhny (Russia)

- 11.00-11.25 EL.10.1 A. Huet, S.P. Kim, and C. Schubert (Michoacan, Mexico)  
*Schwinger pair creation in constant and time-dependent fields*
- 11.25-11.50 EL.10.2 R. Schützhold (Duisburg, Germany)  
*Dynamically assisted Sauter-Schwinger effect*
- 11.50-12.10 EL.10.3 E.G. Gelfer and A.M. Fedotov (Moscow, Russia)  
*On the conditions of occurrence of QED cascades in ultra-strong electromagnetic fields*
- 12.10-12.30 EL.10.4 B. King and H. Ruhl (München, Germany)  
*Electron-seeded pair-creation in external fields*
- 12.30-12.45 EL.10.5 A.M. Fedotov and A.A. Mironov (Moscow, Russia)  
*Pair creation by ultrashort high-frequency photon beam in intense laser field*