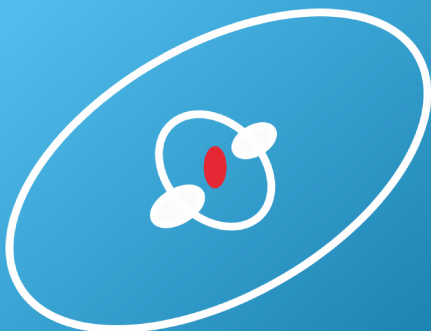


Program

12th European Conference on
Atoms, Molecules and Photons



ECAMP 12

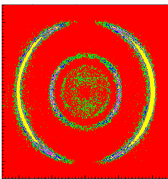
Frankfurt am Main

September 5th - 9th, 2016

Industrial Exhibition



Quantel
Industrial and Scientific Laser Division
4 rue Louis de Broglie
22300 Lannion - FRANCE



RoentDek

Handels GmbH

Supersonic Gas Jets
Detection Techniques
Data Acquisition System
Multifragment Imaging Systems



Welcome to ECAMP 2016

Questions/Support:

In case of any problems please contact either the conference office or ask the conference staff for help. The staff is wearing easily recognizable “ECAMP 12” T-shirts.

Conference Office: HSZ, 3rd Floor, HZ13

Help Hotline: +49 (0)69 798-19463
+49 (0)1590-8146358 (cell)

WiFi Access:

- Eduroam is available on campus.
- In case you do not have eduroam, a personal WiFi-account can be requested at the conference office.

The ECAMP 12 is

organized by the Institut für Kernphysik Frankfurt



and hosted by the Goethe-Universität Frankfurt



ECAMP 12 Local Organizing Committee:

Reinhard Dörner

Till Jahnke

Horst Schmidt-Böcking

Markus Schöffler

Lothar Schmidt

Scientific Committee

Dominique Vernhet (Chair) Igor Ryabtsev

Fritz Aumayr (Vice-Chair) Nina Rohringer

Thomas Schlathölter Pierre Pillet

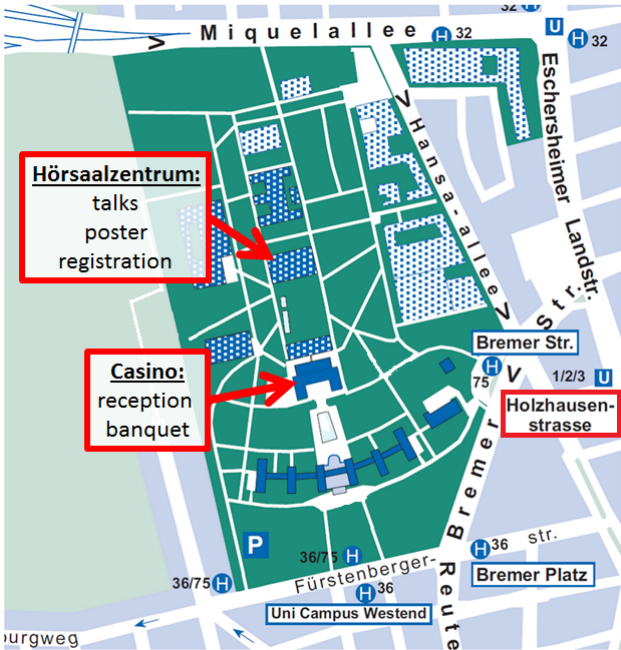
Reinhard Dörner Olga Smirnova

Alexander Eisfeld Tim Softley

Jan-Petter Hansen Sergio Diaz Tintero

Guglielmo Tino

Campus map



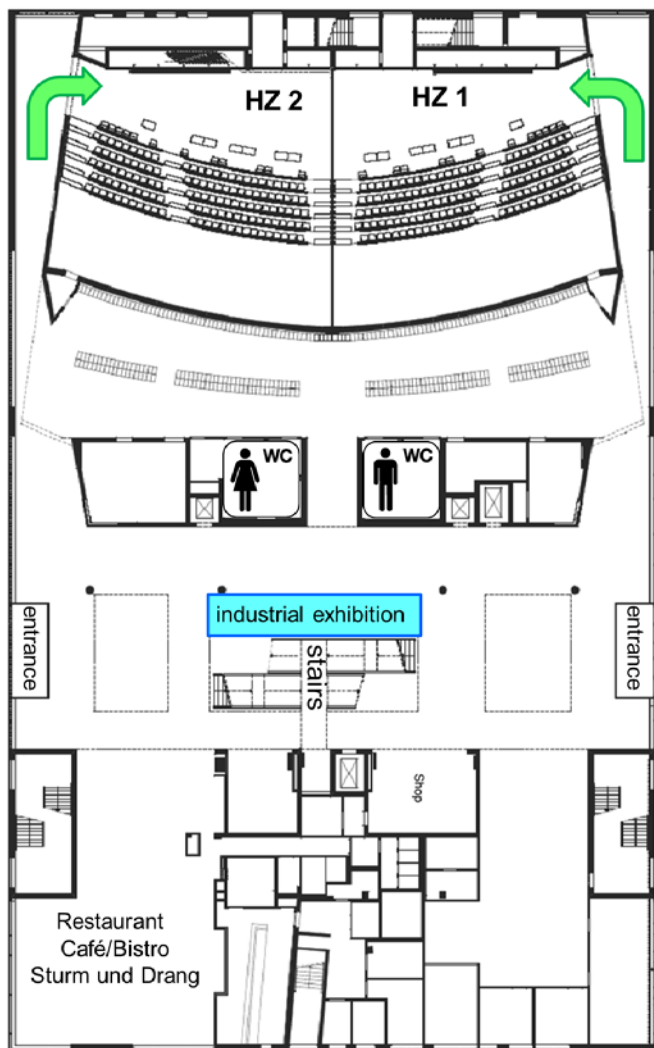
- P** Parking Lot (no public parking!)
- H** Bus Stop
- U** Metro Station
(Lines: **U1,U2,U3,U8**)

The **scientific part** of the conference is held at the “**HSZ**” (designated as “**Hörsaalzentrum**” on the campus map) located in the middle of the Westend-Campus of Frankfurt University.

Site plan

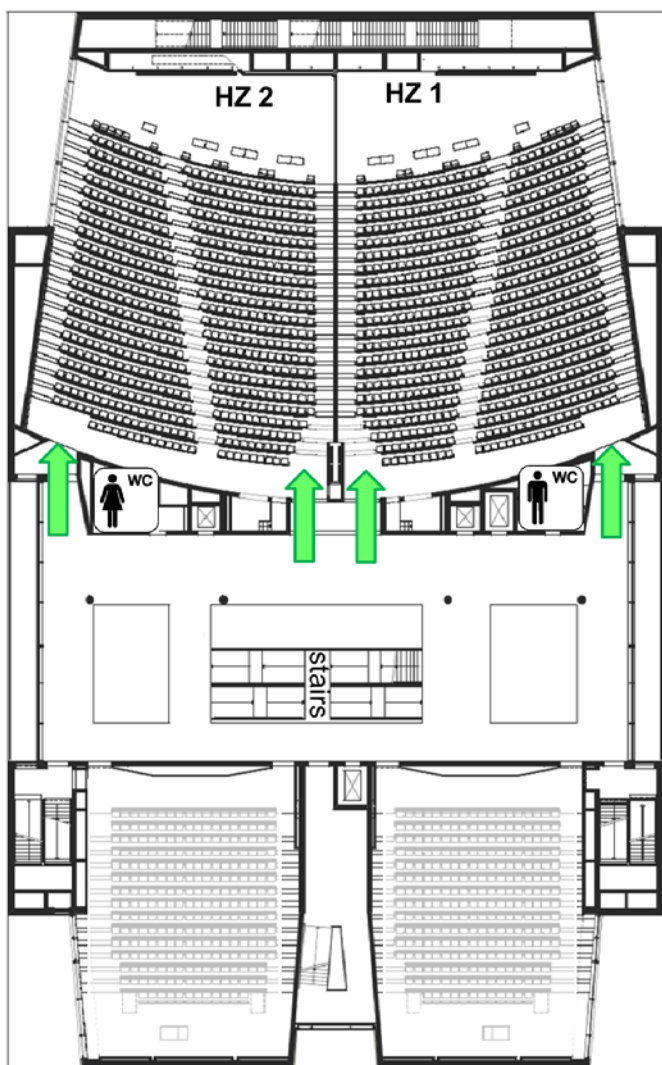
HSZ Ground floor

- ➔ entrance to lecture halls, industrial exhibition and registration (Sunday and Monday)



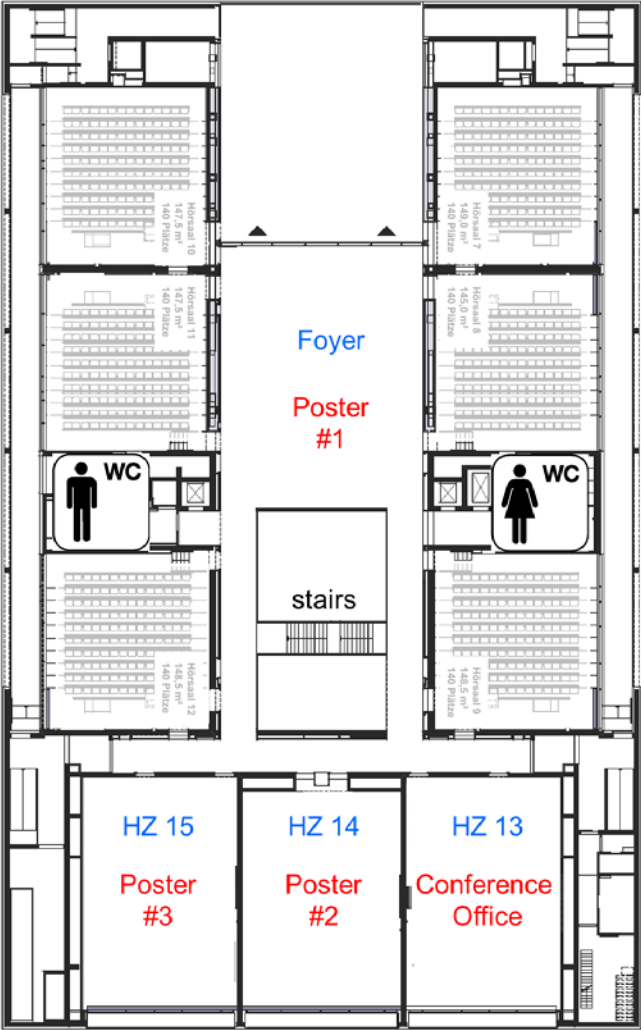
HSZ 1st floor

➔ entrance to lecture halls



HSZ 3rd floor

➔ conference office and poster sessions



Talks

Talks will be held at the HSZ in the lecture halls HZ1 and HZ2. Duration of talks + discussion:

Plenary talks: **50** + 10 minutes

Progress reports: **25** + 5 minutes

Hot topics: **12** + 3 minutes

Please make sure to upload / test your presentation during the break prior to your talk. The ECAMP staff provides technical assistance.

Extended Abstracts

The extended abstracts (150 MB) can be downloaded on the ECAMP-website (Scientific Program).

The EPS Young Scientist Prize, 2016

Dr. Christian Brand from the University of Vienna has been awarded with the EPS Young Scientist Prize in Atomic, Molecular and Optical Physics, 2016 for his contribution "An Atomically Thin Matter-Wave Beam Splitter".

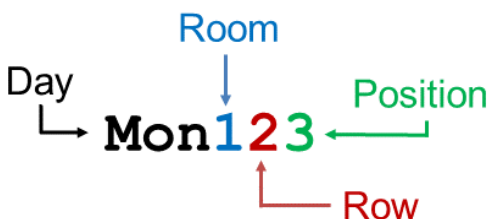
The Prize consist of a certificate, a hot topic talk (Friday, 13:00) at ECAMP12 and a 1,500 € award¹. The EPS AMOPD Young Scientific Prize will be also officially presented at the award ceremony, just before the ECAMP General Assembly.

¹ The award is sponsored by Roentdek Handels GmbH

Poster Sessions

All poster sessions take place on the **3rd floor** of the **HSZ**.

How to decode your poster number:



#1 Foyer, 3rd floor (111 to 169)

- Surface reaction dynamics and self-assembly (Monday)
- Molecular reaction dynamics (Tuesday)
- Atomic and molecular astrophysics (Wednesday)
- Atom interferometry and atomic clocks (Thursday)
- Photon induced processes, strong fields
- Ultrafast dynamics and attosecond physics
- Fundamental physics, precision measurements and metrology

#2 Room HZ 14, 3rd floor (211 to 269)

- Atomic and molecular spectroscopy
- Cold ions, atoms and molecules
- Coherent control (Monday + Tuesday)
- Rydberg atoms and ultra-cold plasmas (Monday + Tuesday)
- Quantum information and cavity QED (Wednesday + Thursday)
- Degenerate quantum gases (Wednesday + Thursday)

#3 Room HZ 15, 3rd floor (311 to 369)

- Atomic and molecular collisions, electron collisions
- Highly charged ions
- Biomolecules, clusters and nanoparticles

The poster boards have the following dimensions: 1.2 m width, 1.5 m height. Pins will be provided. Please remove your poster from the board at the end of the day of the presentation but please do not remove the board number.

Poster awards

Every day you have the opportunity to vote for the best poster. The winner will receive a 50 € gift voucher and a traditional hand crafted Frankfurt souvenir, called “Bembel”. Please use your ballot paper, provided in your conference bag.

Useful information

Internet Access (WiFi)

Eduroam is available on campus. Alternatively, a personal WiFi-account is available at the conference office. A few desktop computers with internet access are located at the conference office for public use, as well. Printing is also possible.

Registration

Registration desk (HSZ, ground level):

- Sunday September 4th, 17:00 – 19:00
- Monday September 5th, 07:30 – 13:30
- Afterwards, please see the Conference Office

Conference Office

For all administrative concerns and special requests please visit the conference office in the HSZ building, 3rd level, room HZ13:

- Monday September 5th, 07:30 – 19:00
- Tuesday September 6th, 07:30 – 19:00
- Wednesday September 7th, 07:30 – 19:00
- Thursday September 8th, 07:30 – 19:00
- Friday September 9th, 07:30 – 19:00

Cloakroom and Locker

A cloakroom and free of charge lockers for conference participants are located on the ground floor of the HSZ.

Transportation

Public transportation:

Please consult

<http://ecamp2016.org/location.htm>

for information on public transportation. **A ticket for public transportation valid for the duration of the conference is included in your conference fee.** Further information on the can be obtained at the conference office.

Parking:

There is no public parking on campus. The use of public transportation is recommended.

Taxi:

A taxi can be ordered on the participant's expense at the conference office (HSZ, HZ13) or directly by phone: +49 (0)69 230001.

Lunch

The restaurant “*Sturm und Drang*” is located inside HSZ on the ground level near the main entrance. Additional canteens can be found across the central square of the campus. They offer food at regular prices for all conference participants and provide price reductions for registered students.

Social program

Monday: Welcome reception

Monday, 19:00, Casino building. You are all invited for snacks, drinks, discussions and live music.

Tuesday: Guided city walking tour

Tuesday, 18:30, meeting point: **front of HSZ**, duration: 2 hours; please sign up at the registration desk early, as slots are limited. We have two tours, “Frankfurt today” and “Frankfurt past”. The tours are free of charge.

Wednesday: Public lecture

Wednesday, 20:30, HZ1. Don’t miss the public lecture by **Horst Schmidt-Böcking** on:

“The Stern-Gerlach-Experiment revisited”.

Thursday: Conference banquet

Thursday, 19:00, Casino building. If you haven’t already, you can still sign up for the conference banquet (50 €) and enjoy a dinner with good food, wine and live music.

Why ECAMP 12 is taking place in 2016 in Frankfurt?

In 2013 ECAMP 11 took place in Aarhus in commemoration of the 100th anniversary of Niels Bohr's 1913 Atomic Model as a benchmark for the development of the new quantum physics. In 1916 Arnold Sommerfeld published the Sommerfeld model to explain the Fine Structure in photon emission spectra [1]. Together with Peter Debye he proposed in 1916 the "Richtungsquantelung" (Directional Quantization) of atomic magnetic moments and angular momenta in the presence of magnetic fields [2] to explain the observations of the Zeeman effect. These contributions of Sommerfeld were fundamental milestones towards modern quantum physics. Sommerfeld's Fine Structure theory is indirectly, but closely linked to Frankfurt [3]. It was Karl Schwarzschild who helped Sommerfeld to introduce the relativistic dynamics of astrophysics (Mercury perihelion rotation) into the many-body problem of electron dynamics in atoms [3]. Karl Schwarzschild was born in 1873 in Frankfurt and died on the 11th of May 1916 in Göttingen.



*From left to right: Arnold Sommerfeld^a,
Karl Schwarzschild^b, Wilhelm Lenz^c*

In Sommerfeld's original publication [1] he did not realize that in his theoretical treatment a basic constant was hidden. His postdoc Wilhelm Lenz, while being a soldier in the war, was the only one, who realized by redrafting Sommerfeld's equations that a basic constant played a crucial role in the Fine structure splitting. In a letter to Sommerfeld [4] Lenz defined for the first time the so called "Fine structure constant". Wilhelm Lenz was born 1888 in Frankfurt and became, in 1921, "ordinarius for theoretical physics" at the newly founded University of Hamburg. In his group in Hamburg he had famous assistants like Wolfgang Pauli, Ernst Ising, Hans Jensen etc.



From left to right: Walther Gerlach, Lise Meitner and Otto Stern, 1927 in Zürich^d

Last but not least Otto Stern together with Walther Gerlach in 1922 in Frankfurt provided, in the famous so-called Stern-Gerlach-Experiment, experimental evidence for directional quantization and provided first evidence that all atomic angular momenta were quantized [5].

In the first century (1914-1924) after the foundation of Frankfurt University the following physicists worked in Frankfurt: Max von Laue, Otto Stern, Max Born, Walther Gerlach, Alfred Landè and Hans Bethe.

References:

- [1] Arnold Sommerfeld: *Die Feinstruktur der Wasserstoff- und der Wasserstoff-ähnlichen Linien*. Sitzungsberichte der mathematisch-physikalischen Klasse der K. B. Akademie der Wissenschaften zu München, (1915), S. 459-500 and Sommerfeld, Arnold: *Zur Quantentheorie der Spektrallinien, Ergänzungen und Erweiterungen*. Vorgetragen in der Sitzung am 4. November 1916, Sitzungsberichte der mathematisch-physikalischen Klasse der K. B. Akademie der Wissenschaften zu München, Seite 131-186, (1916)
- [2] A. Sommerfeld: *Physikalische Zeitschrift*, Bd. 17, 491-507, (1916); P. Debye, Quantenhypothese und Zeeman-Effekt, Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-Physikalische Klasse, 142-153, Band (1916)
- [3] A. Sommerfeld: *Die Quantentheorie den Spektrallinien und die letzte Arbeit von K. Schwarzschild*, Umschau 20 (1916)
- [4] Michael Eckert: *Arnold Sommerfeld, Atomphysiker und Kulturbote, 1868–1951*. Eine Biografie. Wallstein, Göttingen, (2013)
- [5] O. Stern: *Ein Weg zur experimentellen Prüfung der Richtungsquantelung im Magnetfeld*. Z. Physik, 7, 249-253 (1921); W. Gerlach und O. Stern, *Der experimentelle Nachweis der Richtungsquantelung im Magnetfeld*. Z. Physik, 9, 349-352 (1922); W. Gerlach und O. Stern, *Über die Richtungsquantelung im Magnetfeld*. Ann. Physik, 74, 673-699 (1924)

^a [http://www.apprendre-](http://www.apprendre-math.info/history/photos/Sommerfeld_5.jpeg)

^b [math.info/history/photos/Sommerfeld_5.jpeg](http://www.apprendre-math.info/history/photos/Sommerfeld_5.jpeg)

^c Fachbereich Physik, Goethe Universität Frankfurt

^d [http://www.physik.uni-](http://www.physik.uni-rostock.de/typo3temp/pics/9ca9fcc199.png)
[rostock.de/typo3temp/pics/9ca9fcc199.png](http://www.physik.uni-rostock.de/typo3temp/pics/9ca9fcc199.png)

private picture collection of "Ellen Weyl-Bär"

Session 1, 9:00–10:00, HZ1

Plenary: Anton Zeilinger

Session chair: J. Burgdörfer

- 9:00 Plenary: *Photon Entanglement: Fundamentals*
1.1 *and Applications*
Anton Zeilinger (Austria)

**Session Mon1-3, 10:00–12:00, Foyer, HZ14, HZ15
Poster**

Session 2, 13:30–15:30, HZ1

Photon induced processes

Session chair: T. Jahnke

- 13:30 Progress Report: *À la carte sculpted potential*
2.1 *energy surfaces based on purine and*
pyrimidine cores: from photostable DNA
nucleobases to UVA chemotherapeutic agents
Ines Corral (Spain)
- 14:00 Progress Report: *Using Picosecond*
2.2 *Photoelectron Imaging to Probe Intramolecular*
Dynamics in Polyatomic Molecules
Katharine Reid (United Kingdom)
- 14:30 Progress Report: *Ethane, carbon tetrafluoride*
2.3 *and 1,1-difluoroethylene illuminated via*
molecular frame photoelectron angular
distributions following core ionization
J.B. Williams (USA)
- 15:00 Progress Report: *Electron Emission Processes*
2.4 *in Atoms, Molecules, and Clusters upon*
Single-Photon Interaction: The Fluorescence
Spectrometry View
Arno Ehresmann (Germany)

Session 3, 13:30–15:30, HZ2

Coherent control

Session chair: M. Wollenhaupt

- 13:30 Progress Report: *Light storage based on*
3.1 *coherent population oscillations*
Fabienne Goldfarb (France)
- 14:00 Progress Report: *Quantum optimal control*
3.2 *theory with realistic laser pulses*
Esa Räsänen (Finland)
- 14:30 Hot Topic: *Direct Excitation of Butterfly States*
3.3 *in Rydberg Molecules*
Carsten Lippe (Germany)
- 14:45 Hot Topic: *Antiproton energy loss distribution in*
3.4 *He gas*
Sándor Borbély (Romania)
- 15:00 Progress Report: *Quantum Cheshire Cat*
3.5 Daniel Rohrlich (Israel)

Session 4, 16:00–18:00, HZ1

Molecular processes I

Session chair: R. Wester

- 16:00 Progress Report: *Photon and Ion Collisions*
4.1 *with Complex Molecular Systems*
Paola Bolognesi (Italy)
- 16:30 Progress Report: *Quantification of electron and*
4.2 *photon induced DNA Damage using DNA*
Nanotechnology
Ilko Bald (Germany)
- 17:00 Progress Report: *Electron-Induced Chemistry*
4.3 *in Molecular Solids*
Anne Lafosse (France)
- 17:30 Hot Topic: *Why are leaves green? Action*
4.4 *spectroscopy of chlorophyll molecules and*
dimers in vacuo.
Mark H Stockett (Denmark)
- 17:45 Hot Topic: *Isomerization and Fragmentation of*
4.5 *Retinal Chromophore Derivatives*
Yoni Toker (Israel)

Session 5, 16:00–18:00, HZ2

Quantum information & cavity QED

Session chair: K. Singer

- 16:00 Progress Report: *Measurement and control of*
5.1 *a nanomechanical oscillator at the thermal*
decoherence rate
Tobias J. Kippenberg (Switzerland)
- 16:30 Progress Report: *Chiral Quantum Optics*
5.2 Arno Rauschenbeutel (Austria)
- 17:00 Progress Report: *Scalable quantum computing*
5.3 *with atomic qubit arrays*
Mark Saffman (USA)
- 17:30 Progress Report: *Bell correlations in a*
5.4 *Bose-Einstein condensate*
Philipp Treutlein (Switzerland)

Tuesday, September 6, 2016,

Session 6, 9:00–10:00, HZ1

Plenary: Wolfgang Ketterle

Session chair: H. Schmidt-Böcking

- 9:00 Plenary: *Ultracold atoms as quantum*
6.1 *simulators for new materials –optical lattices,*
synthetic magnetic fields and topological
phases
Wolfgang Ketterle (USA)

Session Tue1-3, 10:00–12:00, Foyer, HZ14, HZ15
Poster

Session 7, 13:30–15:30, HZ1

Chiral molecules

Session chair: L. Nahon

- 13:30 Progress Report: *Photoelectron Circular*
7.1 *Dichroism Measured by Multiphoton Ionization*
Thomas Baumert (Germany)
- 14:00 Progress Report: *X-ray magnetic circular*
7.2 *dichroism spectroscopy in transition metal*
dimer cations
Vicente Zamudio-Bayer (Germany)
- 14:30 Progress Report: *Enantiomer differentiation*
7.3 *using microwave three-wave mixing*
Melanie Schnell (Germany)
- 15:00 Hot Topic: *Exploring Dynamics in Chiral*
7.4 *Systems with Free-Electron Lasers*
Markus Ilchen (Germany)
- 15:15 Hot Topic: *Kinetic-energy release distributions*
7.5 *of fragment anions from collisions of potassium*
atoms with D-ribose and tetrahydrofuran
Filipe Ferreira da Silva (Portugal)

Session 8, 13:30–15:30, HZ2

Fundamental physics I

Session chair: T. Stöhlker

13:30 Progress Report: *Strong field physics with*
8.1 *highly charged ions*

Vladimir M. Shabaev (Russia)

14:00 Progress Report: *Experimental Studies of*
8.2 *Alignment and Polarization Phenomena in*
Energetic Atomic Collisions

Stanislav Tashenov (Germany)

14:30 Progress Report: *Precision Deep-UV*
8.3 *Ramsey-Comb Spectroscopy of Kr and H2*

Kjeld S.E. Eikema (Netherlands)

15:00 Progress Report: *Molecular spectroscopy,*
8.4 *based on laser frequency combs*

Nathalie Picqué (France)

Session 9, 16:00–18:00, HZ1

Surface reactions & self-assembly

Session chair: F. Aumayr

16:00 Progress Report: *Ab-initio molecular dynamics*
9.1 *with electronic friction: beyond the*
Born-Oppenheimer approximation in
gas-surface processes

Maite Alducin (Spain)

16:30 Progress Report: *Fast Atom Diffraction : Bound*
9.2 *State Resonances to probe the coherence of a*
crystal surface on the micron scale. A tribute to
Otto Stern.

philippe roncin (France)

17:00 Progress Report: *Highly charged ion interaction*
9.3 *with graphene*

Richard A. Wilhelm (Germany)

17:30 Hot Topic: *From a loophole-free Bell test to a*
9.4 *global quantum network*

Andreas Reiserer (Netherlands)

- 17:45 Hot Topic: *Laboratory study of VUV*
9.5 *photodesorption processes of interstellar ice*
analogues
Mathieu Bertin (France)

Session 10, 16:00–18:00, HZ2

Ultrafast & Attosecond I

Session chair: J. Mauritsson

- 16:00 Progress Report: *Molecular Response to*
10.1 *Ultra-Intense Femtosecond X-rays: Correlated*
Charge and Nuclear Dynamics in Soft and Hard
X-ray Regimes
Artem Rudenko (USA)
- 16:30 Progress Report: *Tuneable polarization of*
10.2 *bright high-order harmonics*
Oren Cohen (Israel)
- 17:00 Progress Report: *High harmonic spectroscopy*
10.3 *of polyatomic molecules*
Yann Mairesse (France)
- 17:30 Progress Report: *Laser-induced alignment of*
10.4 *molecules in He-nanodroplets: Revivals,*
long-time coherence and breaking-loose
Henrik Stapelfeldt (Denmark)

Session 11, 8:30–9:30, HZ1

Plenary: Christine Joblin

Session chair: S. Tendero

- 8:30 Plenary: *Ion trap experiments to study the*
11.1 *photophysics and stability of interstellar*
polycyclic aromatic hydrocarbons
Christine Joblin (France)

Session 12, 9:30–10:30, HZ1

Award ceremony & ECAMP, EGAS General Assembly

Young Scientist Prize Award for Christian Brand

Session Wed1-3, 10:30–12:30, Foyer, HZ14, HZ15
Poster

Session 13, 14:00–16:00, HZ1

Cold gases I

Session chair: A. Dorn

- 14:00 Progress Report: *Bose-Einstein Condensate of*
13.1 *thulium atoms*
Aleksy V. Akimov (USA)
- 14:30 Progress Report: *Studying two-dimensional*
13.2 *Fermi and Bose gases in a single experiment*
Andrey V. Turlapov (Russia)
- 15:00 Progress Report: *Controlled formation of cold*
13.3 *molecules in their absolute ground state*
Olivier Dulieu (France)
- 15:30 Progress Report: *Laser Cooling and*
13.4 *Magneto-Optical Trapping of Diatomic*
Molecules
Michael Tarbutt (United Kingdom)

Session 14, 14:00–16:00, HZ2

Ultrafast & Attosecond II

Session chair: M. Lein

- 14:00 Progress Report: *Ultrafast electron dynamics initiated in molecules by attosecond pulses*
14.1 Andrea Trabattoni (Italy)
- 14:30 Progress Report: *Real-time wavepacket dynamics through a conical intersection: the primary event of vision*
14.2 Giulio Cerullo (Italy)
- 15:00 Progress Report: *Extreme Ultraviolet Free Induction Decay Controlled with Strong IR Pulses*
14.3 Johan Mauritsson (Sweden)
- 15:30 Progress Report: *Isolated attosecond pulses with controlled polarization*
14.4 Carlos Hernández-García (USA)

Session 15, 16:30–18:30, HZ1

Cold gases II

Session chair: G. Tino

- 16:30 Progress Report: *Measurement beyond the Heisenberg uncertainty bound in the negative mass reference frame.*
15.1 Eugene Polzik (Denmark)
- 17:00 Progress Report: *Nonlinear quantum optics mediated by Rydberg atoms*
15.2 Sebastian Hofferberth (Germany)
- 17:30 Progress Report: *Multicomponent slow light*
15.3 Gediminas Juzeliunas (Lithuania)
- 18:00 Progress Report: *Conical Intersections and Non-Adiabatic Transitions in Ultracold Gases*
15.4 Sebastian Wüster (Germany)

Session 16, 16:30–18:30, HZ2

Strong fields & molecular frag.

Session chair: J.-P. Hansen

16:30 Progress Report: *Laser-subcycle control of*
16.1 *double-ionization and electron recapture*
processes

Kitzler Markus (Austria)

17:00 Progress Report: *Classical-quantum*
16.2 *correspondence in atom ionization by*
mid-infrared pulses

Christoph Lemell (Austria)

17:30 Hot Topic: *The interaction of metastable neon*
16.3 *with a few cycle laser pulse*

A.S. Kheifets (Australia)

17:45 Hot Topic: *Unraveling the Principles Governing*
16.4 *the Stability of Endohedral and Exohedral*
Fullerenes

Yang Wang (Spain)

18:00 Progress Report: *Coherent Control of Bond*
16.5 *Making*

Christiane Koch (Germany)

Thursday, September 8, 2016,

Session 17, 9:00–10:00, HZ1

Plenary: Henry Chapman

Session chair: J.-M. Rost

- 9:00 Plenary: *Imaging Macromolecules with X-ray*
17.1 *Laser pulses*
Henry Chapman (Germany)

Session Thu1-3, 10:00–12:00, Foyer, HZ14, HZ15
Poster

Session 18, 13:30–15:30, HZ1

Molecular processes II

Session chair: A. Trabatoni

- 13:30 Progress Report: *Low Energy Molecular*
18.1 *Collisions in Merged Neutral Beams*
Andreas Osterwalder (Switzerland)
- 14:00 Progress Report: *Taming Molecular Collisions*
18.2 Sebastiaan van de Meerakker (Netherlands)
- 14:30 Progress Report: *Electron Induced*
18.3 *Decomposition of Thiopyrimidine Nucleobases*
Janina Kopyra (Poland)
- 15:00 Progress Report: *Collision Experiments with*
18.4 *Hydrogenated PAHs*
Nathalie de Ruette (Sweden)

Session 19, 13:30–15:30, HZ2

Highly charged ions

Session chair: H. Rothard

- 13:30 Progress Report: *Astrophysics and Chemistry*
19.1 *Induced by Ion Collisions*
Alicja Domaracka (France)
- 14:00 Progress Report: *Studying Ion Atom Collisions*
19.2 *Using MOTRIMS*
Daniel Fischer (Germany)

- 14:30 Progress Report: *Nanoparticles in proton and heavy ion therapy*
19.3 Sandrine Lacombe (France)
- 15:00 Hot Topic: *Ions collisions to suppress the thermal hysteresis in magnetocaloric thin films*
19.4 Sophie Cervera (France)
- 15:15 Hot Topic: *Determination of Energy-Transfer Distributions in Ionizing Ion-Molecule Collisions*
19.5 Sylvain Maclot (Sweden)

Session 20, 16:00–18:00, HZ1

Strong fields II

Session chair: M. Kitzler

- 16:00 Progress Report: *Control and dynamic x-ray imaging of ultrafast nanoplasma dynamics*
20.1 Thomas Fennel (Germany)
- 16:30 Progress Report: *Time-dependent two-particle reduced density matrix theory: Application to high-harmonic generation*
20.2 Iva Brezinova (Austria)
- 17:00 Progress Report: *Slow electrons from intense fields*
20.3 Jan Michael Rost (Germany)
- 17:30 Progress Report: *Time-dependent restricted-active-space self-consistent-field theory: Formulation, application, and extension by space-partition concept*
20.4 Haruhide Miyagi (Denmark)

Session 21, 16:00–18:00, HZ2

Clusters & nano particles

Session chair: N. Sisourat

- 16:00 Progress Report: *Towards nanoparticle enhanced radiotherapy*
21.1 Fred Currell (United Kingdom)
- 16:30 Progress Report: *Resonant Auger driven interatomic Coulombic decay*
21.2 Kirill Gokhberg (Germany)

17:00 Progress Report: *Atomic Processes in Laser*
21.3 *Produced Plasmas for EUV Nanolithography*
Oscar Versolato (Netherlands)

17:30 Progress Report: *Structure and dynamics of*
21.4 *clusters probed by synchrotron radiation based*
X-ray spectroscopies
Minna Patanen (France)

Session 22, 9:00–10:00, HZ1

Plenary: Klaus Blaum

Session chair: T. Schlathölter

9:00 Plenary: *Precision measurements of*

22.1 *fundamental properties of atomic particles in Penning traps*

Klaus Blaum (Germany)

Session 23, 10:30–11:30, HZ1

Plenary: Fernando Martin

Session chair: D. Vernhet

10:30 Plenary: *Attosecond Molecular Dynamics*

23.1 Fernando Martin (Spain)

Session 24, 13:00–15:00, HZ1

Fundamental quantum physics

Session chair: M. Schöffler

13:00 Hot Topic: *Optoelectrical cooling of polar*

24.1 *molecules to submillikelvin temperatures*
Martin Ibrügger (Germany)

13:15 Hot Topic: *The Magnetic Moment of the Proton*

24.2 *and a High-Precision Comparison of the Proton to Antiproton Charge-To-Mass Ratio*
Andreas Mooser (Japan)

13:30 Progress Report: *Gravity tests and precision*

24.3 *measurements with a cold atom gradiometer based on Raman and Bragg transitions*
Gabriele Rosi (Italy)

14:00 Progress Report: *Two Particle Interference with*

24.4 *Cold Atoms*
Chris Westbrook (France)

14:30 Hot Topic: *Observation of the Efimov state of the helium trimer*

24.5
Maksim Kunitski (Germany)

- 14:45 Hot Topic: *Photoionization and*
24.6 *photofragmentation of Lu₃N@C₈₀q⁺ ions*
($q=1,2,3$)
Stefan Schippers (Germany)

Session 25, 13:00–15:00, HZ2

Fundamental physics II

Session chair: I. Ryabtsev

- 13:00 Hot Topic: *An Atomically Thin Matter-Wave*
25.1 *Beam Splitter*
Christian Brand (Austria)
- 13:15 Hot Topic: *Observation of Atom-Wave Beats*
25.2 *Using a Kerr Modulator for Atom Waves*
Matthias Büchner (France)
- 13:30 Progress Report: *\hbar^+ production from*
25.3 *Collisions between Positronium and keV*
Antiprotons for GBAR
Paul-Antoine Hervieux (France)
- 14:00 Progress Report: *Coulomb Crystallization of*
25.4 *Highly Charged Ions*
Lisa Schmöger (Germany)
- 14:30 Progress Report: *New methods and*
25.5 *approaches in high-resolution spectroscopy of*
ultracold atoms and ions
Alexey Taichenachev (Russia)

Session 26, 15:00–15:30, HZ1

Closing Ceremony

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| | Monday | | Tuesday | | Wednesday | Thursday | | Friday |
|---------------|--|---|---|--------------------------------------|---|---|---|---------------------------------------|
| 08:30 - 09:00 | opening ceremony | | | | Plenary: Christine Joblin | | | |
| 09:00 - 10:00 | Plenary: Anton Zellinger chair: J. Burgdorfer | Plenary: Wolfgang Ketterle chair: H. Schmidt-Böcking | conference foto | | chair: S. Tondro Award ceremony & Gen. Ass. (ECAMP & EGAS) | Plenary: Henry Chapman chair: J.-M. Rost | Plenary: Klaus Blaum chair: T. Schachinger | |
| 10:00 - 12:00 | Poster & Coffee | | Poster & Coffee | | Poster & Coffee | | 10:30 Plenary: Martin chair: D. Vornhol | Fernando |
| 12:00 - 13:30 | Lunch break | | Lunch break | | Lunch break | | Lunch break | |
| 13:30 - 15:30 | <u>Photon induced processes:</u> | <u>Coherent control:</u> | <u>Chiral molecules:</u> | <u>Fundamental Physics I:</u> | <u>Cold gases I:</u> | <u>Ultrafast & Attosecond II:</u> | <u>Molecular processes II:</u> | <u>Fundamental quantum obs.:</u> |
| | chair: T. Jahnke | chair: M. Wolbrandt | chair: L. Neron | chair: T. Söhler | | | chair: A. Traubert | chair: H. Rind |
| | Corral | Godtard | Baurnert | Shabaev | Mironov | Calegari | Osterwalder | Domaracka |
| | Reid | Räsänen | Zamudio-Bayer | Tashenov | Turapov | Cerdilo | v. d. Meeraker | Fischer |
| | Williams | Lippe / Borbey | Schnell | Ekema | Bouboula | Mauritsson | Koyra | Lacombe |
| | Ehresmann | Ronlich | Ichien / F. da Silva | Picqué | Tarbut | Hernandez-Garcia | de Ruette | Cervera / Madrid |
| 15:30 - 16:00 | Coffee break | | Coffee break | | Coffee break | | Coffee break | |
| 16:00 - 18:00 | <u>Molecular processes I:</u> | <u>Quantum info. & early QED:</u> | <u>Surface reac. & self-assembly:</u> | <u>Ultrafast & Attosecond I:</u> | <u>Cold gases II:</u> | <u>Strong fields & molecular frag.:</u> | <u>Strong fields II:</u> | <u>Clusters & nano-particles:</u> |
| | chair: R. Vetter | chair: K. Stör | chair: F. Alary | chair: J. Marreson | chair: G. To | chair: J.-P. Hesse | chair: M. Kisch | chair: N. Sieber |
| | Bolognesi | Kipperberg | Adachi | Rudenko | Pozik | Karamatskou | Fennel | Currell |
| | Bald | Rauschenbeutel | Ronch | Cohen | Hofreberth | Rost | Brezinova | Gokhberg |
| | Lafosse | Saifman | Wilhelm | Mairesse | Juarezlunas | Lemell | Rost | Versolatto |
| | Stockelt / Toker | Treutlein | Rieser / Berlin | Stapelfeldt | Wüster | Koch | Miyagi | Palanen |
| 18:00 - 19:00 | | | | | | | | |
| 19:00 - ... | Welcome Reception (Casino on Campus) | | guided (walking) tour | | 20:30 Public Lecture: H. Schmidt-Böcking | | Conference Dinner (Casino on Campus) | |
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