Molecular Physics Division
Fachverband Molekülphysik (MO)

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Overview of Invited Talks and Sessions

(Lecture halls F102 and F142; Poster Empore Lichthof)

Invited Talks

MO 4.1	Tue	11:00–11:30	F102	**Revealing chiral charge migration in UV-excited molecules** — •Vincent Wanie, Etienne Bloch, Erik P. Månsson, Lorenzo Colaizzi, Sergey Ryabchuk, Krishna Saraswathula, Andrea Trabattoni, Valérie Blanchet, Nadia Ben Amor, Marie-Catherine Heitz, Yann Mairesse, Bernard Pons, Francesca Calegari
MO 7.1	Wed	11:00–11:30	F142	**Augmenting basis with normalizing flows for solving Schrödinger equations: theoretical analysis** — •Yahya Saleh, Armin Iske, Andrey Yachmenev, Jochen Küpper
MO 9.1	Wed	14:30–15:00	F102	**Full Angle-Resolved Mapping of Electron Rescattering Probabilities in the Molecular Frame** — Federico Branchi, Lingfeng Ge, Felix Schell, Killian Dickson, Mark Mero, Horst Rottke, Serguei Patchkovskii, Marc Vrakking, Varun Makhija, •Jochen Mikosch
MO 15.1	Thu	11:00–11:30	F142	**Excited state dipole moments from rotationally resolved Stark spectroscopy** — •Michael Schmitt, Matthias Zajonz, Marie-Luise Hebestreit
MO 22.1	Fri	11:00–11:30	F142	**A QED Theory of Mediated RET Between a Pair of Chiral Molecules** — •Akbar Salam

Invited Talks of the joint Symposium Precision Physics with Highly Charged Ions

See SYHC for the full program of the symposium.

SYHC 1.1	Mon	11:00–11:30	E415	**First experiments at CRYRING@ESR** — •Esther Babette Menz, Michael Lestinsky, Håkan Danared, Claude Krantz, Zoran Andelkovic, Carsten Brandau, Angela Bräuning-Demian, Svetlana Fedotova, Wolfgang Geithner, Frank Herfurth, Anton Kalinin, Ingrid Kraus, Uwe Spillmann, Gleb Vorobyev, Thomas Stöhlker
SYHC 1.2	Mon	11:30–12:00	E415	**Testing quantum electrodynamics in the simplest and heaviest multi-electronic atoms** — •Martino Trassinelli
SYHC 1.3	Mon	12:00–12:30	E415	**Indirect measurements of neutron-induced reaction cross-sections at heavy-ion storage rings** — •Beatriz Jurado
SYHC 1.4	Mon	12:30–13:00	E415	**Laboratory X-ray Astrophysics with Trapped Highly Charged Ions at Synchrotron Light Sources** — •Sonja Bernitt
SYHC 2.1	Mon	17:00–17:30	E415	**Observation of metastable electronic states in highly charged ions by Penning-trap mass spectrometry** — •Kathrin Kromer, Menno Door, Pavel Filianin, Zoltán Harman, Jost Herkenhoff, Paul Indelicato, Christoph H. Keitel, Daniel Lange, Chunhai Lyu, Yuri N. Novikov, Christoph Schweiger, Sergey Eliseev, Klaus Blaum
SYHC 2.2	Mon	17:30–18:00	E415	**Towards extreme-ultraviolet optical clocks** — •José R. Crespo López-Urrutia

SYHC 2.3	Mon	18:00–18:30	E415	**Coupling atomic and nuclear degrees of freedom in highly charged ions** — •Adriana Pálffy
SYHC 2.4	Mon	18:30–19:00	E415	**Laser Spectroscopy at the Storage Rings of GSI/FAIR** — •Wilfried Nörtershäuser

Invited Talks of the joint Symposium SAMOP Dissertation Prize 2023

See SYAD for the full program of the symposium.

SYAD 1.1	Mon	14:30–15:00	E415	**Quantum gas magnifier for sub-lattice resolved imaging of 3D quantum systems** — •Luca Asteria
SYAD 1.2	Mon	15:00–15:30	E415	**From femtoseconds to femtometers – controlling quantum dynamics in molecules with ultrafast lasers** — •Patrick Rupprecht
SYAD 1.3	Mon	15:30–16:00	E415	**Particle Delocalization in Many-Body Localized Phases** — •Maximilian Kiefer-Emmanouilidis
SYAD 1.4	Mon	16:00–16:30	E415	**Feshbach resonances in a hybrid atom-ion system** — •Pascal Weckesser

Invited Talks of the joint Symposium Machine Learning in Atomic and Molecular Physics

See SYML for the full program of the symposium.

SYML 1.1	Tue	11:00–11:30	E415	**Imaging a complex molecular structure with laser-induced electron diffraction and machine learning** — •Katharina Chirvi, Xinyao Liu, Kasra Amini, Aurelien Sanchez, Blanca Belsa, Tobias Steinle, Jens Biegert
SYML 1.2	Tue	11:30–12:00	E415	**Physics-inspired learning algorithms for optimal shaping of atoms with light** — •Maximilian Prüfer
SYML 1.3	Tue	12:00–12:30	E415	**Machine-Learning assisted quantum computing and interferometry** — •Ludwig Mathey, Lukas Broers, Nicolas Heimann
SYML 1.4	Tue	12:30–13:00	E415	**Efficient quantum state tomography with convolutional neural networks** — •Moritz Reh, Tobias Schmale, Martin Gärttner

Prize Talks of the joint Awards Symposium

See SYAS for the full program of the symposium.

SYAS 1.1	Tue	14:35–15:05	E415	**The Reaction Microscope: A Bubble Chamber for AMOP** — •Joachim Ullrich
SYAS 1.2	Tue	15:05–15:35	E415	**Quantum Computation and Quantum Simulation with Strings of Trapped Ca+ Ions** — •Rainer Blatt
SYAS 1.3	Tue	15:35–16:05	E415	**Amplitude, Phase and Entanglement in Strong Field Ionization** — •Sebastian Eckart
SYAS 1.4	Tue	16:05–16:35	E415	**All-optical Nonlinear Noise Suppression in Mode-locked Lasers and Ultrafast Fiber Amplifiers** — •Marvin Edelmann

Invited Talks of the joint Symposium Molecules in Helium Droplets

See SYHD for the full program of the symposium.

SYHD 1.1	Wed	11:00–11:30	E415	**Structure and field-induced dynamics of small helium clusters** — •Maksim Kunitski, Jan Kruse, Qingze Guan, Dörte Blume, Reinhard Dörner
SYHD 1.2	Wed	11:30–12:00	E415	**Coherent Diffraction Imaging of isolated helium nanodroplets and their ultrafast dynamics** — •Daniela Rupp
SYHD 1.3	Wed	12:00–12:30	E415	**Clustering dynamics in superfluid helium nanodroplets: A theoretical study** — •Nadine Halberstadt, Ernesto García Alfonso, Martí Pi, Manuel Barranco
SYHD 1.4	Wed	12:30–13:00	E415	**Messenger spectroscopy of molecular ions – Development of a new experimental setup** — •Elisabeth Gruber

Invited Talks of the joint Symposium From Molecular Spectroscopy to Collision Control at the Quantum Limit

See SYCC for the full program of the symposium.

SYCC 1.1	Thu	11:00–11:30	E415	**The unity of physics: the beauty and power of spectroscopy** — •Paul Julienne
SYCC 1.2	Thu	11:30–12:00	E415	**Using high-resolution molecular spectroscopy to explore how chemical reactions work** — •Johannes Hecker Denschlag
SYCC 1.3	Thu	12:00–12:30	E415	**Monitoring ultracold collisions with laser light** — •Olivier Dulieu
SYCC 1.4	Thu	12:30–13:00	E415	**The birth of a degenerate Fermi gas of molecules** — •Jun Ye

Invited Talks of the joint PhD-Symposium – Many-body Physics in Ultracold Quantum Systems

See SYPD for the full program of the symposium.

SYPD 1.1	Thu	14:30–15:00	E415	**Entanglement and quantum metrology with microcavities** — •Jakob Reichel
SYPD 1.2	Thu	15:00–15:30	E415	**Many-body physics in dipolar quantum gases** — •Francesca Ferlaino
SYPD 1.3	Thu	15:30–16:00	E415	**Quantum Simulation: from Dipolar Quantum Gases to Frustrated Quantum Magnets** — •Markus Greiner
SYPD 1.4	Thu	16:00–16:30	E415	**Quantum gas in a box** — •Zoran Hadzibabic

Invited Talks of the joint Symposium Quantum Optics and Quantum Information with Rigid Rotors

See SYQR for the full program of the symposium.

SYQR 1.1	Fri	11:00–11:30	E415	**Femtosecond timed imaging of rotation and vibration of alkali dimers on the surface of helium nanodroplets** — •Henrik Stapelfeldt
SYQR 1.2	Fri	11:30–12:00	E415	**Quantum toolbox for molecular state spaces** — Eric Kubischta, Shubham Jain, Ian Teixeira, Eric R. Hudson, Wesley C. Campbell, Mikhail Lemeshko, •Victor V. Albert
SYQR 1.3	Fri	12:00–12:30	E415	**Coherent rotational state control of chiral molecules** — •Sandra Eibenberger-Arias
SYQR 1.4	Fri	12:30–13:00	E415	**Optically levitated rotors: potential control and optimal measurement** — •Martin Frimmer
SYQR 2.1	Fri	14:30–15:00	E415	**Rotational optomechanics with levitated nanodumbbells** — •Tongcang Li
SYQR 2.2	Fri	15:00–15:30	E415	**Quantum rotations of nanoparticles** — •Benjamin A. Stickler
SYQR 2.3	Fri	15:30–16:00	E415	**Quantum control of trapped molecular ions** — •Stefan Willitsch
SYQR 2.4	Fri	16:00–16:30	E415	**Full control over randomly oriented quantum rotors: controllability analysis and application to chiral observables** — •Monika Leibscher

Sessions

MO 1.1–1.8	Mon	11:00–13:00	F102	**Cold Molecules (joint session MO/Q)**
MO 2.1–2.8	Mon	11:00–13:00	F142	**Photochemistry**
MO 3.1–3.7	Mon	11:00–13:00	F303	**Interaction with Strong or Short Laser Pulses I (joint session A/MO)**
MO 4.1–4.7	Tue	11:00–13:00	F102	**Ultrafast Dynamics I (joint session MO/A)**
MO 5.1–5.8	Tue	11:00–13:00	F142	**Electronic Spectroscopy**
MO 6.1–6.23	Tue	16:30–19:00	Empore Lichthof	**Poster I**
MO 7.1–7.7	Wed	11:00–13:00	F142	**Machine Learning and Computational and Theoretical Molecular Physics**
MO 8	Wed	13:15–14:00	F142	**Members' Assembly**
MO 9.1–9.7	Wed	14:30–16:30	F102	**Molecules in Intense Fields and Quantum Control (joint session MO/A)**
MO 10.1–10.7	Wed	14:30–16:15	F142	**Collisions (joint session MO/Q)**
MO 11.1–11.7	Wed	14:30–16:30	E214	**Quantum Technologies (joint session Q/MO/QI)**

MO 12.1–12.6	Wed	14:30–16:15	F107	**Interaction with Strong or Short Laser Pulses II (joint session A/MO)**
MO 13.1–13.19	Wed	16:30–19:00	Empore Lichthof	**Poster II**
MO 14.1–14.8	Thu	11:00–13:00	F102	**Ultrafast Dynamics II (joint session MO/A)**
MO 15.1–15.7	Thu	11:00–13:00	F142	**Rotational- and Vibrational-resolution Spectroscopy**
MO 16.1–16.7	Thu	11:00–13:00	F107	**Atomic Clusters (joint session A/MO)**
MO 17.1–17.8	Thu	14:30–16:30	F102	**Quantum Optics and Quantum Information with Rigid Rotors (joint session MO/Q/QI)**
MO 18.1–18.8	Thu	14:30–16:30	F142	**Cluster and Experimental Techniques (joint session MO/A)**
MO 19.1–19.5	Thu	14:30–16:00	F107	**Interaction with Strong or Short Laser Pulses III (joint session A/MO)**
MO 20.1–20.19	Thu	16:30–19:00	Empore Lichthof	**Poster III**
MO 21.1–21.8	Fri	11:00–13:00	F102	**Molecular Physics with X-rays**
MO 22.1–22.8	Fri	11:00–13:15	F142	**Theoretical and Computational Molecular Physics**
MO 23.1–23.8	Fri	14:30–16:30	F102	**Ultrafast Dynamics III (joint session MO/A)**

Members' Assembly of the Molecular Physics Division

Wednesday 13:15–14:00 F142