

DPG-Frühjahrstagung 2023

DPG Spring Meeting 2023

of the Section on Atomic, Molecular, Quantum Optics and Photonics (SAMOP)

Short Programme Short

Short Programme Short
with its Divisions

Atomic Physics, Mass Spectrometry,

Molecular Physics, Quantum Information,

Quantum Optics and Photonics

Short Programme Short

Short together with the Division

Physics Education

Short Programme Short

and the Working Groups

Equal Opportunities, Young DPG

Short Programme Short

Short Programme Short

Short Programme Short

Short Programme

5 – 10 March 2023

Leibniz Universität Hannover



Impressum:

Deutsche Physikalische Gesellschaft e. V.
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Gerichtsstand: Königswinter

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Verantwortlich für den Inhalt:
Dr. Bernhard Nunner (Hauptgeschäftsführer)
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WILHELM UND ELSE HERAEUS-STIFTUNG



AUSSCHREIBUNG FÖRDERPROGRAMME



- WE-Heraeus-Seminare
- Binationale WE-Heraeus-Seminare
- WE-Heraeus-Physikschulen
- WE-Heraeus-Klausurtagungen
- WE-Heraeus Fast Track Workshops

- Einzelprojekte an Schulen und außerschulischen Lernorten
- Lehrerfortbildungen
- WE-Heraeus-Seniorprofessuren



Infos unter
[www.we-heraeus-stiftung.de/
aktivitaeten](http://www.we-heraeus-stiftung.de/aktivitaeten)

Table of Content

Greeting	4
Organisation	6
Scientific Organisation	6
Chairs	6
Symposia.....	7
Organisation of the Exhibition of Scientific Instruments and Literature	7
Information for Participants	9
Conference Information	9
Conference Venue	9
Conference Office / Information Desk	9
With the DPG-APP through the DPG-Meeting	10
Presentations.....	10
Poster Presentation.....	10
Broadcast of Plenary Talks	11
Wilhelm and Else Heraeus Communication Programme	11
Communication / Internet Access	11
Catering	12
Cloakroom.....	12
Notice Board	12
Room of Silence	12
Lost Property	13
Liability Exclusion	13
SAY CHEESE!	13
CO ₂ Compensation	13
Acknowledgement	13
Sponsors	14
Social Events	16
Tutorials	16
Welcome Evening	16
Opening of the Conference	16
Awarding of the DPG-Teachers' Award	16
Awarding of the SAMOP Dissertationprize	16
Public Evening Talk.....	16
Members Assemblies of the DPG Divisions	17
Job Market	17
Exhibition of Scientific Instruments and Literature	18
jDPG Tower Building Contest.....	18
jDPG Pub Crawl.....	18
Labtours	18
Synopsis of the Daily Programme.....	20
Index of Exhibitors	57
Maps	62

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Dear Participants,

Welcome to the DPG-Frühjahrstagung (DPG Spring Meeting) of the Atomic, Molecular, Quantum Optics and Photonics Section (SAMOP) with the participating divisions and working groups involved on the campus of the Leibniz University of Hannover.

I am very pleased that with our DPG-Frühjahrstagungen (DPG Spring Meetings), even more so in presence, we can once again set a widely visible and public sign for the outstanding importance of basic research for scientific and societal progress. Basic research is indispensable for tackling the major societal challenges. Above all a sustainable energy supply with regard to climate change with its dramatic consequences for all life on our planet. On the other hand, the spring conferences are probably the most important instrument of the DPG to enable as many scientists as possible, especially young scientists, to participate in a cross-border, international and peaceful scientific exchange.

The last year has shown us with full force how important and by no means self-evident such a necessary and international exchange is, how vulnerable our world order is and how quickly a change can take place that even threatens the existence of countries. Therefore, it is the special responsibility of the DPG – guided by the values in our DPG Statutes, our compass – to stand up for freedom, tolerance, truthfulness and dignity in science and to act in awareness that we are particularly responsible for shaping the whole of human life: especially and particularly in troubled times!

The DPG conference in Hannover plays an outstanding role for peaceful international scientific exchange and discourse as well as for the perception and appreciation of the work of the DPG. I would therefore like to thank all those involved for their great commitment to the success of this conference. My special thanks go to the University of Hannover for its hospitality and support. I would like to sincerely thank the Wilhelm and Else Heraeus Foundation for once again gen-

erously supporting all DPG spring conferences. My great appreciation goes to the participating divisions and working groups for a great programme. I would especially like to thank the Local Organising Committee, Prof. Silke Ospelkaus, University of Hannover, and her entire team. For the support of all DPG-Frühjahrstagungen (DPG Spring Meetings), my special thanks go to the DPG Head Office.

A handwritten signature in black ink, appearing to read "Joachim Ullrich".

Prof. Dr. Joachim Ullrich
President
Deutsche Physikalische Gesellschaft e. V.

Organisation

Organiser

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Homepage www.dpg-physik.de

Local Organiser

Prof. Dr. Silke Ospelkaus
Leibniz Universität Hannover
Institut für Quantenoptik
Welfengarten 1, 30167 Hannover
Phone +49 (0) 511-762 2589
Email kaisik@iqo.uni-hannover.de

Scientific Organisation

Chair of the AMOP Section (SAMOP)

Prof. Dr. Gereon Niedner-Schattburg
FB Chemie - Physikalische Chemie
Technische Universität Kaiserslautern
Erwin-Schrödinger-Str., Geb. 52, R 535
67663 Kaiserslautern
Phone +49 (0) 0631 205-4697
Email gns@chemie.uni-kl.de

Chairs of the Participating Divisions

- (A) Atomic Physics
Prof. Dr. Thomas Fennel
[\(thomas.fennel@uni-rostock.de\)](mailto:(thomas.fennel@uni-rostock.de))
- (DD) Physics Education
Prof. Dr. Susanne Heinicke
[\(susanne.heinicke@uni-muenster.de\)](mailto:(susanne.heinicke@uni-muenster.de))
- (MO) Molecular Physics
Prof. Dr. Jochen Küpper
[\(jochen.kuepper@cfel.de\)](mailto:(jochen.kuepper@cfel.de))
- (MS) Mass Spectrometry
Prof. Dr. Yuri A. Litvinov
[\(y.litvinov@gsi.de\)](mailto:(y.litvinov@gsi.de))
- (QI) Quantum Information
Prof. Dr. Otfried Gühne
[\(otfried.guehne@uni-siegen.de\)](mailto:(otfried.guehne@uni-siegen.de))

(Q) Quantum Optics and Photonics
 Prof. Dr. Christiane Koch
 (christiane.koch@fu-berlin.de)

Chairs of the Participating Working Groups

(AKC) Equal Opportunities
 OStR Agnes Sandner
 (akc@dpg-physik.de)

(AKjDPG) Young DPG
 Vivienne Leidel
 (leidel@jdpge.de)

Symposia

- | | | |
|------|---|---|
| SYAD | - | SAMOP Dissertation Prize 2023 |
| SYAS | - | Awards Symposium |
| SYCC | - | From Molecular Spectroscopy to Collision Control at the Quantum Limit |
| SYHC | - | Precision Physics with Highly Charged Ions |
| SYHD | - | Molecules in Helium Droplets |
| SYML | - | Machine Learning in Atomic and Molecular Physics |
| SYPD | - | PhD Symposium – Many-body Physics in Ultracold Quantum Systems |
| SYQR | - | Quantum Optics and Quantum Information with Rigid Rotors |

Organisation of the Exhibition of Scientific Instruments and Literature

DPG-Kongress-, Ausstellungs- und Verwaltungsgesellschaft mbH
Hauptstraße 5, 53604 Bad Honnef
Phone +49 (0) 2224 9232-0
Fax +49 (0) 2224 9232-50
Email dpg@dpg-physik.de
Homepage www.dpg-gmbh.de

Programme

The scientific programme consists of **1.533** contributions:

- | | |
|-----|---------------|
| 10 | Plenary talks |
| 1 | Evening talk |
| 8 | Prize talks |
| 88 | Invited talks |
| 819 | Talks |
| 603 | Posters |
| 4 | Tutorials |

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Information for Participants

The conference will be held March 5 – 10, 2023.

Conference Information

Conference Venue

Leibniz Universität Hannover
Welfengarten 1
30167 Hannover

Most of the activities will take place in the main building of the university (Welfengarten 1). Sessions of the Division Physics Education (Didaktik der Physik) will take place in the Verfügbungsgebäude (Schneiderberg 50) and the Kalihörsaal (Historic building Chemistry, Callinstraße 9). For a detailed map of the campus and the buildings please see "Maps" at the end of this document.

Conference Office / Information Desk

The conference office and the information desk are located in room C 109 on the right side of the „Lichthof“ in the main building of the Leibniz Universität Hannover. The opening hours are the following:

	<u>Registration</u>	<u>Information Desk</u>
Sunday, March 5	15:00 – 19:30	16:00 – 22:00
Monday, March 6	08:00 – 17:00	08:00 – 19:00
Tuesday, March 7	08:00 – 17:00	08:30 – 19:00
Wednesday, March 8	08:00 – 17:00	08:30 – 21:00
Thursday, March 9	08:00 – 17:00	08:30 – 19:00
Friday, March 10	08:00 – 12:00	08:30 – 17:00

Beside this programme you have received your name tag, a receipt for your conference fee, a conference ticket for public transport (GVH, 2nd class, zone ABC, valid March 5 – 10, 2023), and the Login-Password for using WLAN (WiFi) at the registration. The name tag must be worn visibly during the entire conference.

The organisers, staff of the conference desk, and the student assistants will be identifiable by coloured name tags or Φ-T-shirts. Please contact them if you have any questions. Do not hesitate to inquire about all necessary information concerning the conference, orientation in Hannover, accommodation, restaurants, going out, and cultural events at the information desk.

With the DPG-App through the DPG Spring Meeting!

The updated DPG-App is ready-to-use and contains additional functions/features: In addition to the option of target groups, the electronical programme booklets for DPG Conferences (E-VERHANDLUNGEN) are accessible and it is possible to compile a „favorite list“ regarding events one wants to attend. Just download the DPG-App for Android or iOS now and utilize the supplemental offerings. You will find more information under <https://www.dpg-physik.de/service/dpg-app.html>.

Presentation

Scientific presentations will be held either orally or by poster and will be given in English or German.

All lecture halls are equipped with projectors (16:9). Speakers are requested to connect their own laptops. The connection standard is HDMI – please bring your own adapters for your device. A limited number of laptops and HDMI adapters will be available for loan. If you would like to take advantage of this offer, please inform the information desk no later than the day before your presentation. In this case, please bring your presentation file on a USB stick to the presentation. An upload system is not provided.

Speakers are requested to be in the lecture hall at least 15 minutes prior to the start of the session, reporting to the chairperson of the session as well as the technical staff to ensure the laptops handshake with the projectors (“beamers”) and to receive a brief introduction to the equipment in the lecture hall. If you need other presentation facilities please ask for availability at the information desk as soon as you arrive at the conference or better in advance via E-Mail dpgtagung@iqo.uni-hannover.de.

Usually, presentations will have the following durations. For exact information, please refer to your division.

- Contributed talks are 15 minutes including discussion and speaker change
(12 min talk + 3 min discussion/speaker change)
- Invited talks are 30 minutes including discussion and speaker change
(25 min talk + 5 min discussion/speaker change)
- Plenary presentations are 45 minutes

Poster Presentation (Monday – Thursday)

The poster sessions will take place in the Gallery of the Lichthof (main building) from Monday to Thursday 16:30 to

19:00. The poster boards will be marked with the number according to the scientific programme. Authors are asked to mount their poster before their session. Each poster should display the number according to the scientific programme. Each poster should not be larger than 85 cm x 120 cm (DIN A0).

For the mounting of the poster please use the provided mounting material at the poster frame or contact the student staff available at the poster area. The presenting authors should be at hand for discussion at their poster during at least half of the poster session and should note this time at the poster. The posters have to be removed after the session. Any posters remaining on poster boards will be removed early in the next morning and disposed without requesting your permission. The conference management accepts no liability for the posters.

Broadcast of Plenary Lectures

All plenary lectures will be presented in the Audimax (E415) and broadcasted live in the lecture hall E214 (next to the Audimax).

Wilhelm and Else Heraeus Communication Programme

Important notes for participants who apply for a grant of the Wilhelm and Else Heraeus Foundation:

At the beginning of the conference you will receive an identification form at the conference office. The participation in the conference must be certified by the conference desk. You have the possibility to leave this certificate with the staff members of the DPG (preferably at the conference office) or submit it to the DPG head office (DPG-Geschäftsstelle, Hauptstr. 5, 53604 Bad Honnef, Germany) by **April 14, 2023 at the latest**. For more detailed information refer to <http://samop23.dpg-tagungen.de>.

The Deutsche Physikalische Gesellschaft thanks the Wilhelm and Else Heraeus Foundation for the generous financial support of young academic talents. We hope that young physicists will continue to seize the offered opportunity for active scientific communication at scientific conferences. A total of about 37,800 young academics were supported by this programme so far.

Communication / Internet Access

To use the WLAN network on the campus of Leibniz Universität Hannover with your own notebooks, access data, login and password will be issued with the registration documents.

Leibniz Universität Hannover is a member of the Eduroam

Union. If your university is also part of the Eduroam Union, you can also use the Leibniz Universität Hannover WLAN in all buildings via your own Eduroam access.

Catering

Coffee and tea will be available all day in the Lichthof and in the East Entrance Foyer/Audimax. Additional coffee stands are located near the lecture halls for breaks between lectures.

Lunch will be available at the Mensa on the corner of Schneiderberg/Callinstraße (opening hours: 08:00 – 14:30 / meal times: 11:30 – 14:00) and at the “Contine” on the Conti-Campus, Königsworther Str. 1 (opening hours: 08:00 – 16:00 / meal times: 11:00 – 16:00). Snacks are also available in the Sprengelstube cafeteria in the basement of the main university building, Welfengarten 1 (08:00 – 16:00).

There are various offers for snacks as well as restaurants in the immediate vicinity of the university (a list is available at the information desk).

Cloakroom

Participants are asked to look carefully after their wardrobe, valuables, laptops, and other belongings. The organisers decline any liability. In room F335 of Leibniz Universität Hannover you will find a cloakroom managed by student assistants. The opening hours are as follows:

Sunday	March 5	16:45 – 22:15
Monday	March 6	08:45 – 19:15
Tuesday	March 7	08:45 – 19:15
Wednesday	March 8	08:45 – 21:30
Thursday	March 9	08:45 – 19:15
Friday	March 10	08:45 – 16:45

Notice Board

All changes to the conference programme (i.e. cancellation of presentations, change of rooms, etc.) are also transferred directly to the online version of the programme which will be updated continuously and is available in different formats (sorted by publication date, filterable by conference parts and as an rss-feed). Please use the form <https://samop23.dpg-tagungen.de/programm/notice-board-form> to notify changes or cancellations.

Room of Silence

The Room of Silence is located next to the Sprengelstube on the ground floor of the main building and has the room number F031. This room offers space to relax, pray and meditate. It is not dedicated to a specific religious tradition, all religious communities are welcome.

Lost Property

You can hand in lost property at the information desk. You can also collect your lost property there.

Liability Exclusion

Participants are asked to look carefully after their wardrobe, valuables, laptops and other belongings. There can be no liability assumed.

SAY CHEESE!

The DPG Spring Meetings are basically public to the press. Please note: On behalf of DPG, photos and videos will be recorded during the Spring Meetings. In the context of public relations, these recordings (as the case may be) will be published on our website, in social media or within prints of the DPG for example.

CO₂ compensation for the DPG conferences

By decision of the Executive Board, the DPG will compensate for fossil CO₂ emissions resulting from mobility for DPG conferences and committee meetings.

Acknowledgement

The Deutsche Physikalische Gesellschaft (DPG) and the local organisers want to thank the following institutions for supporting the conference:

- Wilhelm and Else Heraeus Foundation, Hanau
- Leibniz Universität Hannover
- all industrial sponsors (refer to page 14)
- and all staff, who make the success of the conference possible.

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Social Events

Tutorials

On Sunday, March 5, tutorials on current scientific topics will take place from 17:00 to 19:00 in B305 and B302. The tutorials are primarily aimed at students and young scientists. The tutorials are open to all conference participants.

Welcome Evening

Sunday, March 5, 19:30 – 22:00

On Sunday, the Welcome Evening will be held in the atrium (Lichthof) of the main building of Leibniz Universität Hannover, Welfengarten 1, 30167 Hannover to which all registered participants are kindly invited. Snacks and drinks will be served. Do not miss the opportunity to meet people in an informal atmosphere. Please wear your name tag which you received at the registration. Access to the welcome evening is only available to registered participants. Registration office will be open on Sunday from 15:00 to 19:30.

Opening of the Conference

A short opening address will be given by the chair of the AMOP Section (SAMOP) on Monday, March 6 from 08:55 until 09:00 in the Audimax (E415).

Awarding of the DPG-Teacher's Award („DPG-Lehrerpreis“)

Dienstag, 7. März, 14:30 Uhr, DD HS 2.202 (in german language)

Der DPG-Lehrerpreis wird für herausragende Leistungen in der Gestaltung und Weiterentwicklung des Faches Physik an Schulen vergeben, beispielsweise für Leistungen, die in besonderem Maße geeignet sind, Schülerinnen und Schüler für das Fach Physik zu motivieren, die Bedeutung der Physik für das Leben und Zusammenleben der Menschen aufzuzeigen sowie Talente für die Physik zu erschließen. Weitere Informationen unter <https://www.dpg-physik.de/auszeichnungen/dpg-preise/dpg-lehrerpreis>.

Awarding of the SAMOP-Dissertationprize 2023

Tuesday, March 7, 14:30, Audimax (E415)

Talks by the four finalists will be given at the symposium (SYAD) on Monday. The award will be presented on Tuesday immediately before the Awards Symposium (SYAS) at 14:30 in the Audimax (E415).

Public Evening Talk

Wednesday, March 8, 20:00 – 21:00, Audimax (E415)

Prof. Dr. Reinhard Werner, Leibniz Universität Hannover will speak about:

„Das Ende der klassischen Welt – Der Physik-Nobelpreis 2022“

The Public Evening Talk is open for the interested public and all conference participants. It will be held in German. The entrance is free.

Members' Assemblies of the DPG-Divisions

During the DPG Spring Meeting, Members' Assemblies of the DPG-Divisions take place. Please refer to the scientific programme for the time and place of the meetings.

Job Market

During the conference various companies and organisations will present their working fields and career opportunities to all interested participants. The presentations will take place from Tuesday to Thursday, in F435 (4th floor). The presentations will last for about 30 minutes plus discussion.

Programme:

Tuesday, March 7

11:30 – 12:30 Eisenführ Speiser Patentanwälte Rechtsanwälte PartGmbB
„Physik trifft Recht – eine Karriere als Patentanwalt“

13:30 – 14:30 ZEISS
„Working opportunities and career options at ZEISS“

Wednesday, March 8

11:30 – 12:30 Trumpf Lasersystems for Semiconductor Manufacturing GmbH
„TRUMPF Lasersystems for EUV Lithography – Enabler für das digitale Zeitalter gesucht“

13:30 – 14:30 Basycon Unternehmensberatung GmbH
„Aus der Wissenschaft in die Beratung“

Thursday, March 9

11:30 – 12:30 BearingPoint GmbH
„Quantentechnologien und Beratung“

13:30 – 14:30 d-fine GmbH
„Verwendung von Finanzderivaten in Industrieunternehmen“

Exhibition of Scientific Instruments and Literature

From Tuesday, March 7, to Thursday, March 9, there will be an exhibition of scientific instruments and literature in the Lichthof. Several companies (see list of exhibitors at the end of this booklet) will present their products. Opening hours are from 10:30 to 19:00. All conference participants are welcome to attend the exhibition. The entrance is free.

DPG Tower building contest – Hoch hinaus!

The time has come to show how well the knowledge of mechanics still is and teams can work together. The jDPG challenges you to a tower building contest! Who builds the highest tower with given materials – wins. It's simple as that... or isn't it?

The "jDPG Tower building contest" will start on Tuesday, March 7, 10:30 – right after the plenary talks – and will take place in the Audimax (E415). All interested conference participants are welcome.

jDPG Pub Crawl

Tuesday, March 7, 20:00

Meeting Point: Main Entrance of the University

In case you need some time to take a rest in the middle of the conference and you are looking for conversations beyond physics, the local group of the Young DPG cordially invites you to a pub crawl through the nightlife in Hannover. With subsequent visit of the plenary talks on Wednesday ;-)

Labtours

There will be laboratory visits to local institutes, see the announcement on the board near the conference desk.

Laboratory tour at the PTB in Braunschweig

On Wednesday afternoon, March 8, there will be a trip to Braunschweig to visit laboratories at the Physikalisch-Technische Bundesanstalt (PTB). Participation is free of charge.

Schedule:

14:00	Departure by bus from the main entrance of the University.
15:00 – 18:00	Laboratory visit at the PTB
18:10	Departure for the return journey to Hannover,
19:10	Arrival at the university

Registration at the information desk is required for all laboratory tours.

62. Wochenendseminar „PhysikerInnen im Beruf“



Der Übergang von der Hochschule in die **berufliche Karriere** fällt vielen nicht leicht:

Die Möglichkeiten und Aufgabengebiete sind vielfältig – und wer kennt schon nach Studium oder Promotion die verschiedenen Anforderungen und Arbeitsabläufe?

Das Seminar bietet durch **Erfahrungsberichte** etablierter Physiker:innen sowie junger Berufsanfänger:innen Orientierung. Die 15 Vortragenden repräsentieren ganz verschiedene Arbeitsgebiete und zeigen damit das breite **Einsatzspektrum** von Physikerinnen und Physikern.

Neben den Vorträgen bietet der gemütliche Lichtenbergkeller des Physikzentrums Bad Honnef ein ideales Forum, mit den Vortragenden am Abend **in kleiner Runde offen zu diskutieren** und Erfahrungen zu sammeln.

Zielgruppe:

Physikstudierende ab Bachelor bis zur Promotion. Max. 80 Personen.

5. bis 7. Mai 2023

Physikzentrum Bad Honnef

Weitere Infos und Anmeldung: www.pib.dpg-physik.de

Synopsis of the Daily Programme

Sunday, March 5, 2023

unS

Working Group „Young DPG“ (AKjDPG)

Tutorials

AKjDPG 1.1	17:00 – 17:45	B305
A Tutorial on Quantum Simulation		
• <i>Christian Groß</i>		
AKjDPG 1.2	17:45 – 18:30	B305
Developing utility scale quantum computers with trapped ions		
• <i>Winfried Hensinger</i>		
AKjDPG 2.1	17:00 – 17:45	B302
New perspectives in the investigation of ultrafast molecular dynamics		
• <i>Andrea Trabattoni</i>		
AKjDPG 2.2	17:45 – 18:30	B302
Femtosecond spectroscopy in the condensed and gas phase		
• <i>Lukas Bruder</i>		

Sessions

AKjDPG 1	17:00 – 18:30	B305
Tutorial Quantum Simulation and Computing		
AKjDPG 2	17:00 – 18:30	B302
Tutorial Molecular Spectroscopy		

Welcome Evening (for registered participants)

19:30 Lichthof

Monday, March 6, 2023

Mon

Opening

08:55 – 09:00 E415

Plenary Talks

PV I 09:00 – 09:45 E415

Probing the quantum nature of gravity in table-top experiments

•*Markus Aspelmeyer*

PV II 09:45 – 10:30 E415

Quantum Chemistry on Quantum Computers: Challenges and New Directions

•*Sabrina Maniscalco*

Symposium SAMOP Dissertation Prize 2023 (SYAD)

Invited Talks

SYAD 1.1 14:30 – 15:00 E415

Quantum gas magnifier for sub-lattice resolved imaging of 3D quantum systems

•*Luca Asteria*

SYAD 1.2 15:00 – 15:30 E415

From femtoseconds to femtometers – controlling quantum dynamics in molecules with ultrafast lasers

•*Patrick Rupprecht*

SYAD 1.3 15:30 – 16:00 E415

Particle Delocalization in Many-Body Localized Phases

•*Maximilian Kiefer-Emmanouilidis*

SYAD 1.4 16:00 – 16:30 E415

Feshbach resonances in a hybrid atom-ion system

•*Pascal Weckesser*

Session

SYAD 1 14:30 – 16:30 E415

SAMOP Dissertation Prize Symposium (SYAD)

Symposium Precision Physics with Highly Charged Ions (SYHC)

Invited Talks

SYHC 1.1	11:00 – 11:30	E415
	First experiments at CRYRING@ESR	
	• <i>Esther Babette Menz</i>	
SYHC 1.2	11:30 – 12:00	E415
	Testing quantum electrodynamics in the simplest and heaviest multi-electronic atoms	
	• <i>Martino Trassinelli</i>	
SYHC 1.3	12:00 – 12:30	E415
	Indirect measurements of neutron-induced reaction cross-sections at heavy-ion storage rings	
	• <i>Beatriz Jurado</i>	
SYHC 1.4	12:30 – 13:00	E415
	Laboratory X-ray Astrophysics with Trapped Highly Charged Ions at Synchrotron Light Sources	
	• <i>Sonja Bernitt</i>	
SYHC 2.1	17:00 – 17:30	E415
	Observation of metastable electronic states in highly charged ions by Penning-trap mass spectrometry	
	• <i>Kathrin Kromer</i>	
SYHC 2.2	17:30 – 18:00	E415
	Towards extreme-ultraviolet optical clocks	
	• <i>José R. Crespo López-Urrutia</i>	
SYHC 2.3	18:00 – 18:30	E415
	Coupling atomic and nuclear degrees of freedom in highly charged ions	
	• <i>Adriana Pálffy</i>	
SYHC 2.4	18:30 – 19:00	E415
	Laser Spectroscopy at the Storage Rings of GSI/FAIR	
	• <i>Wilfried Nörtershäuser</i>	

Sessions

SYHC 1	11:00 – 13:00	E415
Highly Charged Ions for Atomic, Nuclear and Astrophysics		
SYHC 2	17:00 – 19:00	E415
Intersection of the Electron-Shell and Nuclear Degrees of Freedom		

Atomic Physics Division (A)**Invited Talks**

A 3.1	11:00 – 11:30	F303
Time-resolved Kapitza-Dirac effect		
•Kang Lin		
A 6.1	17:00 – 17:30	F107
Nonperturbative dynamics in heavy-ion-atom collisions		
•Pierre-Michel Hillenbrand		
A 7.1	17:00 – 17:30	F303
Multi-frequency optical lattice for dynamic lattice-geometry control		
•Luca Asteira		

Sessions

A 1	11:00 – 13:00	A320
Quantum Technologies		
A 2	11:00 – 13:00	F107
Collisions, Scattering and Correlation Phenomena		
A 3	11:00 – 13:00	F303
Interaction with Strong or Short Laser Pulses I		
A 4	11:00 – 13:00	F442
Quantum Effects (QED)		
A 5	13:15 – 14:00	F303
Members' Assembly		
A 6	17:00 – 18:45	F107
Precision Spectroscopy of Atoms and Ions I		

A 7	17:00 – 19:00	F303
Ultra-cold Atoms, Ions and BEC I		
A 8	17:00 – 19:00	F342
Quantum Technologies: Color Centers		

Molecular Physics Division (MO)

Sessions

MO 1	11:00 – 13:00	F102
Cold Molecules		
MO 2	11:00 – 13:00	F142
Photochemistry		
MO 3	11:00 – 13:00	F303
Interaction with Strong or Short Laser Pulses I		

Quantum Optics and Photonics Division (Q)

Invited Talks

Q 2.1	11:00 – 11:30	E001
Interferometry with Bose-Einstein Condensates for inertial sensing •Sven Abend		
Q 9.1	17:00 – 17:30	A320
Compressibility and the equation of state of an optical quantum gas in a box •Julian Schmitt		
Q 10.1	17:00 – 17:30	E001
Maiman's ruby laser reborn as diode pumped cw laser •Walter Luhs		

Sessions

Q 1	11:00 – 13:00	A320
Quantum Technologies		
Q 2	11:00 – 13:00	E001
Matter Wave Optics		
Q 3	11:00 – 13:00	E214
Quantum Computing and Simulation		

Q 4	11:00 – 13:00	F102
Cold Molecules		
Q 5	11:00 – 13:00	F342
Quantum Optics: Open Quantum Systems		
Q 6	11:00 – 13:00	F442
Quantum Effects (QED)		
Q 7	16:30 – 19:00	Empore Lichthof
Poster I		
Q 8	16:30 – 19:00	Empore Lichthof
QI Poster I		
Q 9	17:00 – 19:00	A320
Quantum Gases: Bosons I		
Q 10	17:00 – 19:00	E001
Photonics I		
Q 11	17:00 – 19:00	E214
Precision Measurements: Gravity I		
Q 12	17:00 – 18:45	F107
Precision Spectroscopy of Atoms and Ions I		
Q 13	17:00 – 19:00	F303
Ultra-cold Atoms, Ions and BEC I		
Q 14	17:00 – 19:00	F342
Quantum Technologies: Color Centers I		
Q 15	17:00 – 19:00	F442
Quantum Communication		

Quantum Information Division (QI)

Invited Talks

QI 3.1	11:00 – 11:30	B305
Characterising quantum device variability with machine learning		
• <i>Natalia Ares</i>		
QI 5.1	11:00 – 11:30	F428
Building Superconducting Quantum Hardware towards Error-Corrected Quantum Computing		
• <i>Christopher Eichler</i>		

Sessions		
QI 1	11:00 – 13:00	A320
Quantum Technologies I		
QI 2	11:00 – 13:00	B302
Quantum Foundations		
QI 3	11:00 – 13:00	B305
Quantum Machine Learning		
QI 4	11:00 – 13:00	E214
Quantum Computing and Simulation		
QI 5	11:00 – 12:30	F428
Superconducting Qubits and Hybrid Systems		
QI 6	16:30 – 19:00	Empore Lichthof
Poster I		
QI 7	17:00 – 19:00	F342
Quantum Technologies: Color Centers I		
QI 8	17:00 – 19:00	F442
Quantum Communication I		

Physics Education Division (DD)

Invited Talk

DD 1.1	11:00 – 12:00	DD HS 2.202
Welchen Beitrag kann die Hochschulfachdidaktik zur Lehre der Physik als Haupt- und Nebenfach leisten?		
• <i>Christian Kautz</i>		

Sessions

DD 1	11:00 – 12:00	DD HS 2.202
Eröffnung und Hauptvortrag 1: Kautz		
DD 2	12:00 – 13:00	DD 108
Inklusion		
DD 3	12:00 – 13:00	DD 110
Digitale Medien I		
DD 4	12:00 – 13:00	DD 111
Quantenphysik I		

DD 5	12:00 – 13:00	DD 405
	Hochschuldidaktik I	
DD 6	12:00 – 12:40	DD 407
	Interesse und Persönlichkeit I	
DD 7	14:30 – 15:30	DD 108
	Lehr-Lernforschung I	
DD 8	14:30 – 15:30	DD 110
	Digitale Medien II	
DD 9	14:30 – 15:30	DD 111
	Quantenphysik II	
DD 10	14:30 – 15:30	DD 405
	Workshop Lehramtsstudie KFP/DPG	
DD 11	14:30 – 15:30	DD 407
	Nature of Science, Geschichte	
DD 12	16:00 – 17:00	DD 108
	Lehr-Lernforschung II	
DD 13	16:00 – 17:00	DD 110
	Digitale Medien III	
DD 14	16:00 – 17:00	DD 111
	Quantenphysik III	
DD 15	16:00 – 17:00	DD 405
	Hochschuldidaktik II	
DD 16	16:00 – 17:00	DD 407
	Lehreraus- und -fortbildung I	
DD 17	17:00 – 19:00	Empore Lichthof
	Poster – Außerschulisches Lernen	
DD 18	17:00 – 19:00	Empore Lichthof
	Poster – Bildung für nachhaltige Entwicklung	
DD 19	17:00 – 19:00	Empore Lichthof
	Poster – Physikunterricht: Inklusion, Sprache, Anregungen	
DD 20	17:00 – 19:00	Empore Lichthof
	Poster – Quantenphysik	

DD 21	17:00 – 19:00	Empore Lichthof Poster – Lehr-Lernforschung
DD 22	17:00 – 19:00	Empore Lichthof Poster – Neue / digitale Medien
DD 23	17:00 – 19:00	Empore Lichthof Poster – Lehreraus- und -fortbildung
DD 24	17:00 – 19:00	Empore Lichthof Poster – Neue Konzepte
DD 25	17:00 – 19:00	Empore Lichthof Poster – Praktika und Experimente
DD 26	17:00 – 19:00	Empore Lichthof Poster – Astronomie
DD 27	17:00 – 19:00	Empore Lichthof Poster – Hochschuldidaktik
DD 28	17:00 – 19:00	Empore Lichthof Poster – Weitere fachdidaktische Forschung
DD 29	17:00 – 19:00	Empore Lichthof Poster – Arbeitsgruppen Physikdidaktik Quo vadis

Working Group on Equal Opportunities (AKC)

Invited Talks

AKC 1.1	14:30 – 15:15	F128 Vordenkerinnen in Physik und Philosophie •Betti Hartmann, •Carla Schriever
AKC 1.2	15:15 – 16:00	F128 Physik-Projekt-Tage – Ein Workshop für Schülerinnen der Oberstufe •Anna Benecke

Sessions

AKC 1	14:30 – 16:00	F128 AKC 1
AKC 2	17:00 – 18:30	Empore Lichthof AKC 2

Tuesday, March 7, 2023

Plenary Talks

PV III	09:00 – 09:45	E415
Educational Transformation at a Critical Time: The essential roles and promise of physicists		
	•Noah Finkelstein	
PV IV	09:45 – 10:30	E415
New Lightwave Science with Photonic Crystal Fibres		
	•Philip Russell	

Tue

Awards Symposium (SYAS)

	14:30 – 14:35	E415
Awarding of the SAMOP-Dissertationprize 2023		
Prize Talks		
SYAS 1.1	14:35 – 15:05	E415
The Reaction Microscope: A Bubble Chamber for AMOP		
	•Joachim Ullrich (<i>Laureate of the Stern-Gerlach-Medal 2021</i>)	
SYAS 1.2	15:05 – 15:35	E415
Quantum Computation and Quantum Simulation with Strings of Trapped Ca+ Ions		
	•Rainer Blatt (<i>Laureate of the Herbert-Walther-Prize 2023</i>)	
SYAS 1.3	15:35 – 16:05	E415
Amplitude, Phase and Entanglement in Strong Field Ionization		
	•Sebastian Eckart (<i>Laureate of the Gustav-Hertz-Prize 2023</i>)	
SYAS 1.4	16:05 – 16:35	E415
All-optical Nonlinear Noise Suppression in Mode-locked Lasers and Ultrafast Fiber Amplifiers		
	•Marvin Edelmann (<i>Laureate of the Georg-Simon-Ohm-Prize 2023</i>)	

Session

SYAS 1	14:30 – 16:35	E415

Award Symposium

Symposium Machine Learning in Atomic and Molecular Physics (SYML)**Invited Talks**

SYML 1.1	11:00 – 11:30	E415

Imaging a complex molecular structure with laser-induced electron diffraction and machine learning

•*Katharina Chirvi*

SYML 1.2	11:30 – 12:00	E415

Physics-inspired learning algorithms for optimal shaping of atoms with light

•*Maximilian Prüfer*

SYML 1.3	12:00 – 12:30	E415

Machine-Learning assisted quantum computing and interferometry

•*Ludwig Mathey*

SYML 1.4	12:30 – 13:00	E415

Efficient quantum state tomography with convolutional neural networks

•*Moritz Reh***Session**

SYML 1	11:00 – 13:00	E415

Machine Learning in Atomic and Molecular Physics

Atomic Physics Division (A)**Invited Talk**

A 10.1	11:00 – 11:30	F107

Interaction of twisted light with a trapped atom: Interplay of electronic and motional degrees of freedom

•*Anton Peshkov*

Sessions

A 9	11:00 – 13:00	F102
	Ultrafast Dynamics I	
A 10	11:00 – 13:00	F107
	Atomic Systems in External Fields	
A 11	11:00 – 12:45	F303
	Precision Spectroscopy of Atoms and Ions II	
A 12	16:30 – 19:00	Empore Lichthof
	Poster I	

Molecular Physics Division (MO)**Invited Talk**

MO 4.1	11:00 – 11:30	F102
	Revealing chiral charge migration in UV-excited molecules	
	• <i>Vincent Wanie</i>	

Sessions

MO 4	11:00 – 13:00	F102
	Ultrafast Dynamics I	
MO 5	11:00 – 13:00	F142
	Electronic Spectroscopy	
MO 6	16:30 – 19:00	Empore Lichthof
	Poster I	

Mass Spectrometry Division (MS)**Invited Talk**

MS 1.1	11:00 – 11:30	F128
	Lasers against barium – Detection of ^{135}Cs in the environment by AMS	
	• <i>Alexander Wieser</i>	

Session

MS 1	11:00 – 13:00	F128
	Accelerator Mass Spectrometry I	

Quantum Optics and Photonics Division (Q)

Invited Talks

- Q 17.1 11:00 – 11:30 E001
Thin-film lithium niobate waveguides for integrated quantum photonic technologies
•*Francesco Lenzini*
- Q 18.1 11:00 – 11:30 E214
Atoms coupled to nanofibers: from topological phases to correlated photon emission
•*Beatriz Olmos*

Sessions

- Q 16 11:00 – 13:00 A320
Photonic Quantum Technologies
- Q 17 11:00 – 13:00 E001
Integrated Photonics I
- Q 18 11:00 – 13:00 E214
Quantum Optics: Cavity and Waveguide QED I
- Q 19 11:00 – 12:45 F303
Precision Spectroscopy of Atoms and Ions II
- Q 20 11:00 – 13:00 F342
Quantum Gases: Bosons II
- Q 21 11:00 – 13:00 F442
Quantum Technologies: Color Centers II
- Q 22 16:30 – 19:00 Empore Lichthof
Poster II

Quantum Information Division (QI)

Invited Talks

- QI 10.1 11:00 – 11:30 B302
Quantum information in minimal quantum thermal machines
•*Géraldine Haack*
- QI 11.1 11:00 – 11:30 B305
Characterisation of multipartite entanglement beyond the single-copy paradigm
•*Nicolai Friis*

Tue

Sessions

QI 9	11:00 – 13:00	A320
Photonic Quantum Technologies		
QI 10	11:00 – 13:00	B302
Quantum Thermodynamics and Open Quantum Systems I		
QI 11	11:00 – 13:00	B305
Quantum Entanglement I		
QI 12	11:00 – 13:00	E001
Integrated Photonics I		
QI 13	11:00 – 13:00	F428
Quantum Simulation		
QI 14	11:00 – 13:00	F442
Quantum Technologies: Color Centers II		
QI 15	13:15 – 14:00	B305
Members' Assembly		

Physics Education Division (DD)**Prize Talks, Invited Talk**

DD 35.1	12:15 – 12:35	DD 108
Durchführung eines MINT-Berufsinformationstags für die Mittelstufe in Form eines Digitalkongresses		
	•Sebastian Bauer (Träger des DPG-Lehrerpreises 2021)	
... mehr als nur Physik in the lænd		
DD 35.2	12:35 – 12:55	DD 108
•Pirmin Gohn, •Hermann Klein (Träger des DPG-Lehrerpreises 2022)		
14:30 – 14:40 DD HS 2.202		
Verleihung des DPG-Lehrerpreises 2022		

DD 39.1	14:40 – 15:20	DD HS 2.202
Die Welt der Smartphone-Experimente mit phyphox		
	•Sebastian Staacks, •Christoph Stampfer (Träger des Georg-Kerschensteiner-Preises 2023)	
DD 39.2	15:20 – 16:00	DD HS 2.202
Entwicklung und Beforschung von Unterrichtskonzeptionen		
	•Thomas Wilhelm (Träger des Robert-Wichard-Pohl-Preises 2023)	
DD 40.1	16:30 – 17:30	DD HS 2.202
Zwischen Corona und KI: Wo steht die Hochschullehre und wie geht sie weiter?		
	•Peter Salden	
Sessions		
DD 30	11:00 – 12:00	DD 108
Lehr-Lernforschung III		
DD 31	11:00 – 12:00	DD 110
Praktika und neue Praktikumsversuche		
DD 32	11:00 – 12:00	DD 111
Quantenphysik IV		
DD 33	11:00 – 12:00	DD 405
Interesse und Persönlichkeit II		
DD 34	11:00 – 12:00	DD 407
Lehreraus- und -fortbildung II		
DD 35	12:15 – 12:55	DD 108
Impulse aus der Unterrichtspraxis – Vorträge Lehrerpreis		
DD 36	12:15 – 12:55	DD 110
Digitale Medien IV		
DD 37	12:15 – 12:55	DD 405
Hochschuldidaktik III		
DD 38	12:15 – 12:55	DD 407
Bildung für nachhaltige Entwicklung I		

DD 39	14:30 – 16:00	DD HS 2.202
Preisträgersymposium Didaktik		
DD 40	16:30 – 17:30	DD HS 2.202
Hauptvortrag 2: Salden		
DD 41	18:00 – 19:30	DD HS 2.202
Mitgliederversammlung FV DD		

Exhibition of Scientific Instruments and Literature

10:30 – 19:00 Lichthof

jDPG Tower Building Contest

10:30 – 11:00 E415

Job Market: Eisenführ Speiser Patentanwälte Rechtsanwälte PartGmbB

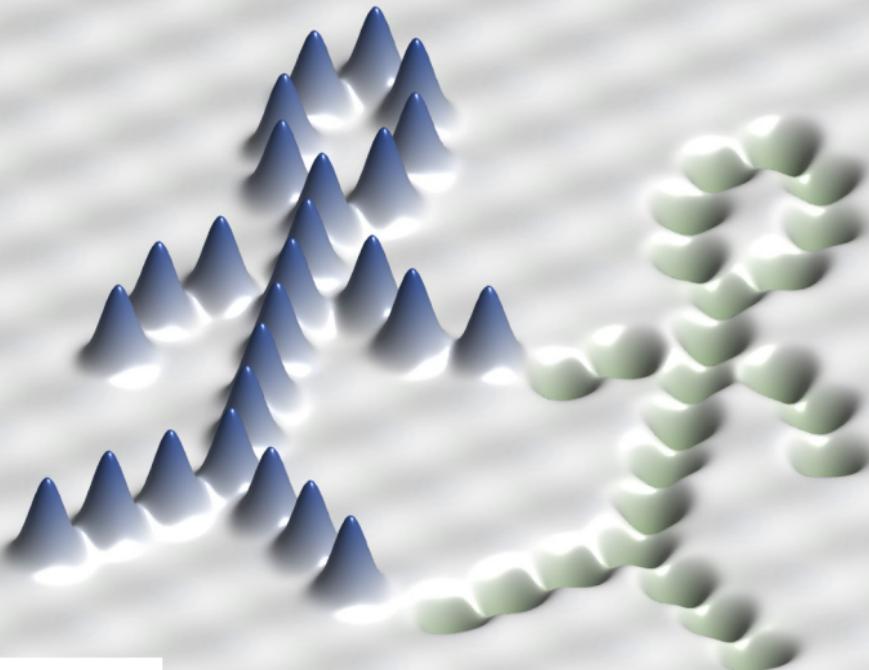
11:30 – 12:30 F435

Job Market: ZEISS

13:30 – 14:30 F435

jDPG Pub Crawl

20:00 Main Entrance University



Deutsche Physikalische Gesellschaft **Φ DPG**

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21. April - 21. Mai 2023



Wednesday, March 8, 2023

Plenary Talks

PV V	09:00 – 09:45	E415	
The device-independent scenario: quantum information information processing based on Bell Theorem			
	• <i>Antonio Acin</i>		
PV VI	09:45 – 10:30	E415	
Cavity-enhanced light-induced processes in aerosol droplets			
	• <i>Ruth Signorell</i>		

Symposium Molecules in Helium Droplets (SYHD)

Invited Talks

SYHD 1.1	11:00 – 11:30	E415	
Structure and field-induced dynamics of small helium clusters			
	• <i>Maksim Kunitski</i>		
SYHD 1.2	11:30 – 12:00	E415	
Coherent Diffraction Imaging of isolated helium nanodroplets and their ultrafast dynamics			
	• <i>Daniela Rupp</i>		
SYHD 1.3	12:00 – 12:30	E415	
Clustering dynamics in superfluid helium nanodroplets: A theoretical study			
	• <i>Nadine Halberstadt</i>		
SYHD 1.4	12:30 – 13:00	E415	
Messenger spectroscopy of molecular ions – Development of a new experimental setup			
	• <i>Elisabeth Gruber</i>		

Session

SYHD 1	11:00 – 13:00	E415
Molecules in Helium Droplets		

Wed

Atomic Physics Division (A)

Invited Talks

A 13.1	11:00 – 11:30	F107
Stability and Melting Dynamics of Mixed Species Coulomb Crystals with Highly Charged Ions		
• <i>Luca Rüffert</i>		
A 14.1	11:00 – 11:30	F303
Realization of the Periodic Quantum Rabi Model in the Deep Strong Coupling Regime with Ultracold Rubidium Atoms		
• <i>Stefanie Moll</i>		
A 17.1	14:30 – 15:00	F107
Adiabatic properties of the bicircular attoclock		
• <i>Paul Winter</i>		

Sessions

A 13	11:00 – 13:00	F107
Highly Charged Ions and their Applications I		
A 14	11:00 – 13:00	F303
Ultra-cold Atoms, Ions and BEC II		
A 15	11:00 – 13:00	F102
Precision Measurements: Atom Interferometry I		
A 16	14:30 – 16:30	F102
Molecules in Intense Fields and Quantum Control		
A 17	14:30 – 16:15	F107
Interaction with Strong or Short Laser Pulses II		
A 18	14:30 – 16:30	F303
Ultra-cold Plasmas and Rydberg Systems I		
A 19	14:30 – 16:00	F428
Ultra-cold Atoms, Ions and BEC III		
A 20	16:30 – 19:00	Empore Lichthof Poster II

Wed

Molecular Physics Division (MO)

Invited Talks

MO 7.1	11:00 – 11:30	F142

•*Yahya Saleh*

MO 9.1	14:30 – 15:00	F102

Full Angle-Resolved Mapping of Electron Rescattering Probabilities in the Molecular Frame

•*Jochen Mikosch*

Sessions

MO 7	11:00 – 13:00	F142	Wed
		Machine Learning and Computational and Theoretical Molecular Physics	
MO 8	13:15 – 14:00	F142	
		Members' Assembly	
MO 9	14:30 – 16:30	F102	
		Molecules in Intense Fields and Quantum Control	
MO 10	14:30 – 16:15	F142	
		Collisions	
MO 11	14:30 – 16:30	E214	
		Quantum Technologies	
MO 12	14:30 – 16:15	F107	
		Interaction with Strong or Short Laser Pulses II	
MO 13	16:30 – 19:00	Empore Lichthof	
		Poster II	

Mass Spectrometry Division (MS)

Invited Talk

MS 3.1	14:30 – 15:00	F128

Durable, low-temperature and highly-selective catalysis in NO reduction and CO oxidation driven by uni-sized Pt clusters supported on Si and SiC substrates

•*Hisato Yasumatsu*

Sessions

MS 2	11:00 – 12:15	F128
Multi-Reflection Time-of-Flight Spectrometers		
MS 3	14:30 – 16:00	F128
Mass Spectrometry Applications		

Quantum Optics and Photonics Division (Q)**Invited Talk**

Q 36.1	14:30 – 15:00	E214
BMBF-Förderprogramm: Wissenschaftliche Vorprojekte		
• <i>Bernhard Ihrig</i>		

Sessions

Q 23	11:00 – 12:45	A320
Optomechanics I & Optovibronics		
Q 24	11:00 – 12:45	B305
Quantum Networks I		
Q 25	11:00 – 13:00	E001
Solid State Quantum Optics		
Q 26	11:00 – 13:00	E214
Quantum Gases: Bosons III		
Q 27	11:00 – 13:00	F303
Ultra-cold Atoms, Ions and BEC II		
Q 28	11:00 – 13:00	F342
Quantum Technologies: Trapped Ions		
Q 29	11:00 – 13:00	F428
Implementations: Ions and Atoms		
Q 30	11:00 – 13:00	F442
Nano-optics		
Q 31	11:00 – 13:00	F102
Precision Measurements: Atom Interferometry I		
Q 32	13:00 – 14:00	F342
Members' Assembly		

Q 33	14:30 – 16:30	A320
Quantum Gases: Bosons IV		
Q 34	14:30 – 16:30	B305
Quantum Communication		
Q 35	14:30 – 16:30	E001
Quantum Optics: Cavity and Waveguide QED II		
Q 36	14:30 – 16:30	E214
Quantum Technologies		
Q 37	14:30 – 16:15	F142
Collisions (with Q)		
Q 38	14:30 – 16:30	F303
Ultra-cold Plasmas and Rydberg Systems I		
Q 39	14:30 – 16:30	F342
Quantum Optics & Nano-Optics		
Q 40	14:30 – 16:30	F442
Photonics II		
Q 41	14:30 – 16:00	F428
Ultra-cold Atoms, Ions and BEC III		
Q 42	16:30 – 19:00	Empore Lichthof
Poster III		
Q 43	16:30 – 19:00	Empore Lichthof
QI Poster II		
Q 44	17:00 – 19:00	A320
Integrated Photonics II		

Quantum Information Division (QI)

Invited Talks

QI 17.1	11:00 – 11:30	B305
Self-testing with dishonest parties and entanglement certification in quantum networks		
•Gláucia Murta		

QI 19.1	11:00 – 11:30	F428
Experimental quantum error correction with trapped ions		
• <i>Philipp Schindler</i>		
QI 21.1	14:30 – 15:00	B305
Qube and Qube-II – Towards Quantum Key Distribution with Small Satellites		
• <i>Lukas Knips</i>		
Sessions		
QI 16	11:00 – 13:00	B302
Concepts and Methods I		
QI 17	11:00 – 12:45	B305
Quantum Networks I		
QI 18	11:00 – 13:00	F342
Quantum Technologies: Trapped Ions		
QI 19	11:00 – 13:00	F428
Implementations: Ions and Atoms		
QI 20	14:30 – 16:30	B302
Concepts and Methods II		
QI 21	14:30 – 16:30	B305
Quantum Communication II		
QI 22	14:30 – 16:30	E214
Quantum Technologies II		
QI 23	16:30 – 19:00	Empore Lichthof
Poster II		
QI 24	17:00 – 19:00	A320
Integrated Photonics II		

Physics Education Division (DD)

Invited Talk

DD 47.1	12:10 – 13:10	DD HS 2.202
Reflexivität zu Sprache und Physiklernen durch Fallverstehen? Eine kasuistische Begleitveranstaltung zu Schulpraktika im Lehramtsstudium		
• <i>Thorid Rabe</i>		

Sessions

DD 42	11:00 – 12:00	DD 108
Lehr-Lernforschung IV		
DD 43	11:00 – 12:00	DD 110
Experimente I		
DD 44	11:00 – 12:00	DD 111
Quantenphysik V		
DD 45	11:00 – 12:00	DD 405
Hochschuldidaktik IV		
DD 46	11:00 – 12:00	DD 407
Bildung für nachhaltige Entwicklung II		
DD 47	12:10 – 13:10	DD HS 2.202
Hauptvortrag 3: Rabe & Helzel		
DD 48	14:30 – 15:30	DD 108
Lehr-Lernforschung V		
DD 49	14:30 – 15:30	DD 110
Experimente II		
DD 50	14:30 – 15:30	DD 111
Quantenphysik VI		
DD 51	14:30 – 15:30	DD 405
Hochschuldidaktik V		
DD 52	14:30 – 15:30	DD 407
außerschulisch/Hochschule		
DD 53	16:00 – 17:30	DD 108
Workshop Studienreformforum		

Exhibition of Scientific Instruments and Literature

10:30 – 19:00 Lichthof

Job Market: Trumpf Lasersystems for Semiconductor Manufacturing GmbH

11:30 – 12:30 F435

Job Market: Basycon Unternehmensberatung GmbH

13:30 – 14:30 F435

Evening Talk

PV VII 20:00 – 21:00 E415

Das Ende der klassischen Welt – Der Physik-Nobelpreis 2022

•*Reinhard Werner*

Thursday, March 9, 2023

Plenary Talks

PV VIII 09:00 – 09:45 E415

Highly charged helium droplets

•*Paul Scheier*

PV IX 09:45 – 10:30 E415

Exploring fundamental interactions and constants with trapped ions

•*Sven Sturm*

Thu

Symposium From Molecular Spectroscopy to Collision Control at the Quantum Limit (SYCC)

Invited Talks

SYCC 1.1 11:00 – 11:30 E415

The unity of physics: the beauty and power of spectroscopy

•*Paul Julienne*

SYCC 1.2 11:30 – 12:00 E415

Using high-resolution molecular spectroscopy to explore how chemical reactions work

•*Johannes Hecker Denschlag*

SYCC 1.3 12:00 – 12:30 E415

Monitoring ultracold collisions with laser light

•*Olivier Dulieu*

SYCC 1.4	12:30 – 13:00	E415
The birth of a degenerate Fermi gas of molecules		
•Jun Ye		
Session		
SYCC 1	11:00 – 13:00	E415
From Molecular Spectroscopy to Collision Control at the Quantum Limit		

PhD Symposium – Many-body Physics in Ultracold Quantum Systems (SYPD)

Invited Talks

SYPD 1.1	14:30 – 15:00	E415
Entanglement and quantum metrology with microcavities		
•Jakob Reichel		
SYPD 1.2		
SYPD 1.2	15:00 – 15:30	E415
Many-body physics in dipolar quantum gases		
•Francesca Ferlaino		
SYPD 1.3	15:30 – 16:00	E415
Quantum Simulation: from Dipolar Quantum Gases to Frustrated Quantum Magnets		
•Markus Greiner		
SYPD 1.4	16:00 – 16:30	E415
Quantum gas in a box		
•Zoran Hadzibabic		
Session		
SYPD 1	14:30 – 16:30	E415
Many-body Physics in Ultracold Quantum Systems		

Atomic Physics Division (A)

Invited Talks

A 22.1	11:00 – 11:30	F107
Efficient and accurate simulation of wide-angle single-shot scattering		
•Paul Tuemmler		

Thu

A 23.1	11:00 – 11:30	F303
Trapping Ions and Ion Coulomb Crystals in a 1D Optical Lattice		
• <i>Daniel Hoenig</i>		
A 24.1	14:30 – 15:00	F107
Intra-cavity photoelectron tomography with an intra-cavity velocity-map imaging spectrometer at 100 MHz repetition rate		
• <i>Jan-Hendrik Oelmann</i>		
A 26.1	14:30 – 15:00	F303
Laser spectroscopy of the heaviest elements with the RADRIS technique		
• <i>Tom Kieck</i>		
Sessions		
A 21	11:00 – 13:00	F102
Ultrafast Dynamics II		
A 22	11:00 – 13:00	F107
Atomic Clusters		
A 23	11:00 – 13:00	F303
Ultra-cold Atoms, Ions and BEC IV		
A 24	14:30 – 16:00	F107
Interaction with Strong or Short Laser Pulses III		
A 25	14:30 – 16:30	F142
Cluster and Experimental Techniques		
A 26	14:30 – 16:30	F303
Precision Spectroscopy of Atoms and Ions III		
A 27	16:30 – 19:00	Empore Lichthof
Poster III		

Molecular Physics Division (MO)

Invited Talk

MO 15.1	11:00 – 11:30	F142
Excited state dipole moments from rotationally resolved Stark spectroscopy		
• <i>Michael Schmitt</i>		

Sessions

MO 14	11:00 – 13:00	F102
Ultrafast Dynamics II		
MO 15	11:00 – 13:00	F142
Rotational- and Vibrational-resolution Spectroscopy		
MO 16	11:00 – 13:00	F107
Atomic Clusters		
MO 17	14:30 – 16:30	F102
Quantum Optics and Quantum Information with Rigid Rotors		
MO 18	14:30 – 16:30	F142
Cluster and Experimental Techniques		
MO 19	14:30 – 16:00	F107
Interaction with Strong or Short Laser Pulses III		
MO 20	16:30 – 19:00	Empore Lichthof
Poster III		

Mass Spectrometry Division (MS)**Invited Talks**

MS 4.1	11:00 – 11:30	F128
Observation of the radiative decay of the thorium-229 nuclear clock isomer		
•Sandro Kraemer		
MS 4.2	11:30 – 12:00	F128
Mass measurements of heavy and superheavy nuclides and isomers with SHIPTRAP		
•Manuel J. Gutiérrez		

Sessions

MS 4	11:00 – 13:00	F128
Heavy and Superheavy Elements		
MS 5	13:00 – 13:30	F128
Members' Assembly		

MS 6	14:30 – 16:30	F128
Accelerator Mass Spectrometry II		
MS 7	16:30 – 19:00	Empore Lichthof
Poster		

Quantum Optics and Photonics Division (Q)

Invited Talks

Q 47.1	11:00 – 11:30	E001
Quantum metrology with non-classical states of light		
• <i>Michèle Heurs</i>		
Q 48.1	11:00 – 11:30	E214
Using optomechanical systems to test gravitational theory – possibilities and limitations		
• <i>Dennis Rätzel</i>		
Q 52.1	14:30 – 15:00	E001
Nonperturbative Floquet engineering and Floquet-dissipative state preparation		
• <i>Francesco Petiziol</i>		
Q 53.1	14:30 – 15:00	E214
Quantum information with atomic quantum metasurfaces and integrated nanophotonics		
• <i>Rivka Bekenstein</i>		

Sessions

Q 45	11:00 – 13:00	A320
Photonics III		
Q 46	11:00 – 13:00	B305
Quantum Control		
Q 47	11:00 – 13:00	E001
Precision Measurements with Optical Clocks		
Q 48	11:00 – 13:00	E214
Optomechanics II		

Q 49	11:00 – 13:00	F303
Ultra-cold Atoms, Ions and BEC IV		
Q 50	11:00 – 13:00	F342
Quantum Gases: Fermions I		
Q 51	14:30 – 16:30	A320
Precision Measurements		
Q 52	14:30 – 16:30	E001
Floquet Engineering and Topology		
Q 53	14:30 – 16:30	E214
Single Quantum Emitters		
Q 54	14:30 – 16:30	F102
Quantum Optics and Quantum Information with Rigid Rotors		
Q 55	14:30 – 16:30	F303
Precision Spectroscopy of Atoms and Ions III		
Q 56	14:30 – 16:30	F342
Quantum Gases: Fermions II		
Q 57	14:30 – 16:30	F428
Quantum Networks II		
Q 58	14:30 – 16:30	F442
Quantum Optics with Photons I		
Q 59	16:30 – 19:00	Empore Lichthof
Poster IV		

Thu

Quantum Information Division (QI)

Invited Talks

QI 26.1	11:00 – 11:30	B305
Quantum firmware: optimal control for quantum simulators		
	• <i>Tommaso Calarco</i>	
QI 28.1	11:00 – 11:30	F428
Conveyor-mode single-electron shuttling in Si/SiGe for a scalable quantum computing architecture		
	• <i>Inga Seidler</i>	

QI 30.1	14:30 – 15:00	B305
Adaptive constant-depth circuits for manipulating non-abelian anyons • <i>Robert König</i>		
Sessions		
QI 25	11:00 – 13:00	B302
Quantum Entanglement II		
QI 26	11:00 – 13:00	B305
Quantum Control		
QI 27	11:00 – 13:00	E001
Precision Measurements with Optical Clocks		
QI 28	11:00 – 13:00	F428
Spin Qubits		
QI 29	14:30 – 16:30	B302
Quantum Thermodynamics and Open Quantum Systems II		
QI 30	14:30 – 16:30	B305
Quantum Algorithms		
QI 31	14:30 – 16:30	E214
Single Quantum Emitters		
QI 32	14:30 – 16:30	F102
Quantum Optics and Quantum Information with Rigid Rotors		
QI 33	14:30 – 16:30	F428
Quantum Networks II		

Exhibition of Scientific Instruments and Literature

10:30 – 19:00 Lichthof

Job Market: BearingPoint GmbH

11:30 – 12:30 F435

Job Market: d-fine GmbH

13:30 – 14:30 F435

Friday, March 10, 2023

Plenary Talks

PV X	09:00 – 09:45	E415
Lightwave electronics in trivial, topological, and strongly correlated solids		
	• <i>Misha Ivanov</i>	
PV XI	09:45 – 10:30	E415
Quantum Simulation using Ultracold Atoms and Molecules		
	• <i>Immanuel Bloch</i>	

Symposium Quantum Optics and Quantum Information with Rigid Rotors (SYQR)

Invited Talks

SYQR 1.1	11:00 – 11:30	E415
Femtosecond timed imaging of rotation and vibration of alkali dimers on the surface of helium nanodroplets		
	• <i>Henrik Stapelfeldt</i>	
SYQR 1.2	11:30 – 12:00	E415
Quantum toolbox for molecular state spaces		
	• <i>Victor V. Albert</i>	
SYQR 1.3	12:00 – 12:30	E415
Coherent rotational state control of chiral molecules		
	• <i>Sandra Eibenberger-Arias</i>	
SYQR 1.4	12:30 – 13:00	E415
Optically levitated rotors: potential control and optimal measurement		
	• <i>Martin Frimmer</i>	
SYQR 2.1	14:30 – 15:00	E415
Rotational optomechanics with levitated nanodumbbells		
	• <i>Tongcang Li</i>	

Fri

Fri

SYQR 2.2	15:00 – 15:30	E415
Quantum rotations of nanoparticles		
• <i>Benjamin A. Stickler</i>		
SYQR 2.3	15:30 – 16:00	E415
Quantum control of trapped molecular ions		
• <i>Stefan Willitsch</i>		
SYQR 2.4	16:00 – 16:30	E415
Full control over randomly oriented quantum rotors: controllability analysis and application to chiral observables		
• <i>Monika Leibscher</i>		
Sessions		
SYQR 1	11:00 – 13:00	E415
Quantum Optics and Quantum Information with Rigid Rotors 1		
SYQR 2	14:30 – 16:30	E415
Quantum Optics and Quantum Information with Rigid Rotors 2		

Atomic Physics Division (A)

Invited Talks		
A 28.1	11:00 – 11:30	F107
Coherent multidimensional spectroscopy of an ultracold gas		
• <i>Friedemann Landmesser</i>		
A 29.1	11:00 – 11:30	F303
An elementary network of entangled optical atomic clocks		
• <i>Raghavendra Srinivas</i>		
A 30.1	14:30 – 15:00	F107
Investigation of Molecular Ions as Sensitive Probes for Fundamental Physics		
• <i>Carsten Zuelch</i>		

A 31.1	14:30 – 15:00	F303
Observation of vibrational dynamics in an ion-Rydberg molecule by a high-resolution ion microscope		
• <i>Moritz Berngruber</i>		
Sessions		
A 28	11:00 – 12:45	F107
Ultra-cold Plasmas and Rydberg Systems II		
A 29	11:00 – 12:45	F303
Precision Spectroscopy of Atoms and Ions IV		
A 30	14:30 – 16:30	F107
Highly Charged Ions and their Applications II		
A 31	14:30 – 16:30	F303
Ultra-cold Atoms, Ions and BEC V		
A 32	14:30 – 16:30	F342
Precision Measurements: Atom Interferometry II		
A 33	14:30 – 16:00	B302
Precision Spectroscopy of Atoms and Ions V		
A 34	14:30 – 16:30	F102
Ultrafast Dynamics III		

Fri

Molecular Physics Division (MO)

Invited Talk		
MO 22.1	11:00 – 11:30	F142
A QED Theory of Mediated RET Between a Pair of Chiral Molecules		
• <i>Akbar Salam</i>		
Sessions		
MO 21	11:00 – 13:00	F102
Molecular Physics with X-rays		
MO 22	11:00 – 13:15	F142
Theoretical and Computational Molecular Physics		

MO 23	14:30 – 16:30	F102
Ultrafast Dynamics III		

Mass Spectrometry Division (MS)

Invited Talks

MS 8.1	11:00 – 11:30	F128
Two color resonant laser SNMS for isotope micro imaging of nuclear fuel debris		
• <i>Tetsuo Sakamoto</i>		
MS 9.1	14:30 – 15:00	F128
Developments to improve antiproton and other mass measurements		
• <i>Christian Smorra on behalf of the BASE collaboration</i>		

Sessions

MS 8	11:00 – 12:45	F128
Accelerator Mass Spectrometry III		
MS 9	14:30 – 16:30	F128
Penning traps, highest precision, neutrino physics, storage rings, new facilities and approaches		

Fri

Quantum Optics and Photonics Division (Q)

Invited Talk

Q 61.1	11:00 – 11:30	E001
Quantum Imaging With Nonlinear Interferometers		
• <i>Markus Gräfe</i>		

Sessions

Q 60	11:00 – 12:45	A320
Photonics IV		
Q 61	11:00 – 13:00	E001
Quantum Optics with Photons II		
Q 62	11:00 – 13:00	E214
Precision Measurements: Gravity II		

Q 63	11:00 – 12:45	F107
Ultra-cold Plasmas and Rydberg Systems II		
Q 64	11:00 – 12:45	F303
Precision Spectroscopy of Atoms and Ions IV		
Q 65	11:00 – 13:00	F342
Many-body Physics		
Q 66	11:00 – 13:00	F428
Quantum Metrology		
Q 67	11:00 – 13:00	F442
Optomechanics III		
Q 68	14:30 – 16:15	B305
Quantum Gases: Bosons V		
Q 69	14:30 – 16:30	F303
Ultra-cold Atoms, Ions and BEC V		
Q 70	14:30 – 16:30	F342
Precision Measurements: Atom Interferometry II		
Q 71	14:30 – 15:30	F442
Quantum Optics: Cavity and Waveguide QED III		
Q 72	14:30 – 16:00	B302
Precision Spectroscopy of Atoms and Ions V		

FE

Quantum Information Division (QI)

Sessions

QI 34	11:00 – 13:00	B302
Concepts and Methods III		
QI 35	11:00 – 13:00	B305
Quantum Computers: Algorithms and Benchmarking		
QI 36	11:00 – 13:00	F428
Quantum Metrology		
QI 37	14:30 – 16:15	F428
Quantum Many Body Systems		

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Index of Exhibitors

Exhibition venue

Leibniz Universität Hannover, Lichthof (Main Building),
Welfengarten 1, 30167 Hannover

Exhibition opening hours

Tuesday, March 7	10:30 – 19:00
Wednesday, March 8	10:30 – 19:00
Thursday, March 9	10:30 – 19:00

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Jäger Computergesteuerte Messtechnik GmbH Rheinstraße 4, 64653 Lorsch	11
<i>Jäger Computergesteuerte Messtechnik GmbH – ADwin-Echtzeitsysteme für schnelle, freiprogrammierbare Steuer- und Regelaufgaben</i>	
JUST VACUUM GmbH Daimlerstraße 17, 66849 Landstuhl <i>Vakuumtechnik</i>	3
Kashiyama Europe GmbH Leopoldstraße 244, 80807 München <i>Vacuum Solutions</i>	25
LIOP-TEC GmbH Industriestraße 4, 42477 Radevormwald <i>Gepulste ns Dye-laser Systeme, Optomechanik</i>	44
Lumibird 2 rue Paul Sabatier, 22300 Lannion, France <i>Laser</i>	7
mechOnics AG Papferding 44 a, 85461 Bockhorn <i>Mikropositionierer mit Piezoträgheitsantrieb und Schrittmotor, Piezo- und Schrittmotorsteuerungen</i>	50
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MG Optical Solutions GmbH Industriestraße 23, 86919 Utting/Ammersee <i>Laser Servo and Controller / Spectroscopy / DBR-Laser / Wavelength Meter, Spectrum Analyzer / MIR Spectrometers, Detectors and Camera / Terahertz Imaging Systems and Laser</i>	43
MRC Systems GmbH Medizintechnische Systeme Hans-Bunte-Straße 10, 69123 Heidelberg <i>Laser Strahlstabilisierung</i>	31
Munich Quantum Valley Leopoldstraße 244, 80807 München <i>Munich Quantum Valley promotes quantum science and quantum technologies in Bavaria and offers various research positions, especially in connection to quantum computing.</i>	8

PlanQC GmbH	15
Lichtenbergstraße 8, 85748 Garching	
<i>Planqc quantum computing atom by atom</i>	
Qioptiq Photonics GmbH & Co. KG	29
Königsallee 23, 37081 Göttingen	
<i>Präzisionsoptik und Mechanik, Faseroptik, Aufbausysteme, Optische Tische</i>	
Qlibri	42
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<i>Ludwig-Maximilians-Universität München open micro-resonators and micromirrors for ultra-sensitive absorption microscopy and as a cryogenic quantum optics platform</i>	
Quantum Design GmbH	5
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qutools GmbH	28
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<i>Quantum Physics Education, Photon Counter, Time Tagger, Displacement Measurement</i>	
Radiant Dyes Laser Acc. GmbH	30
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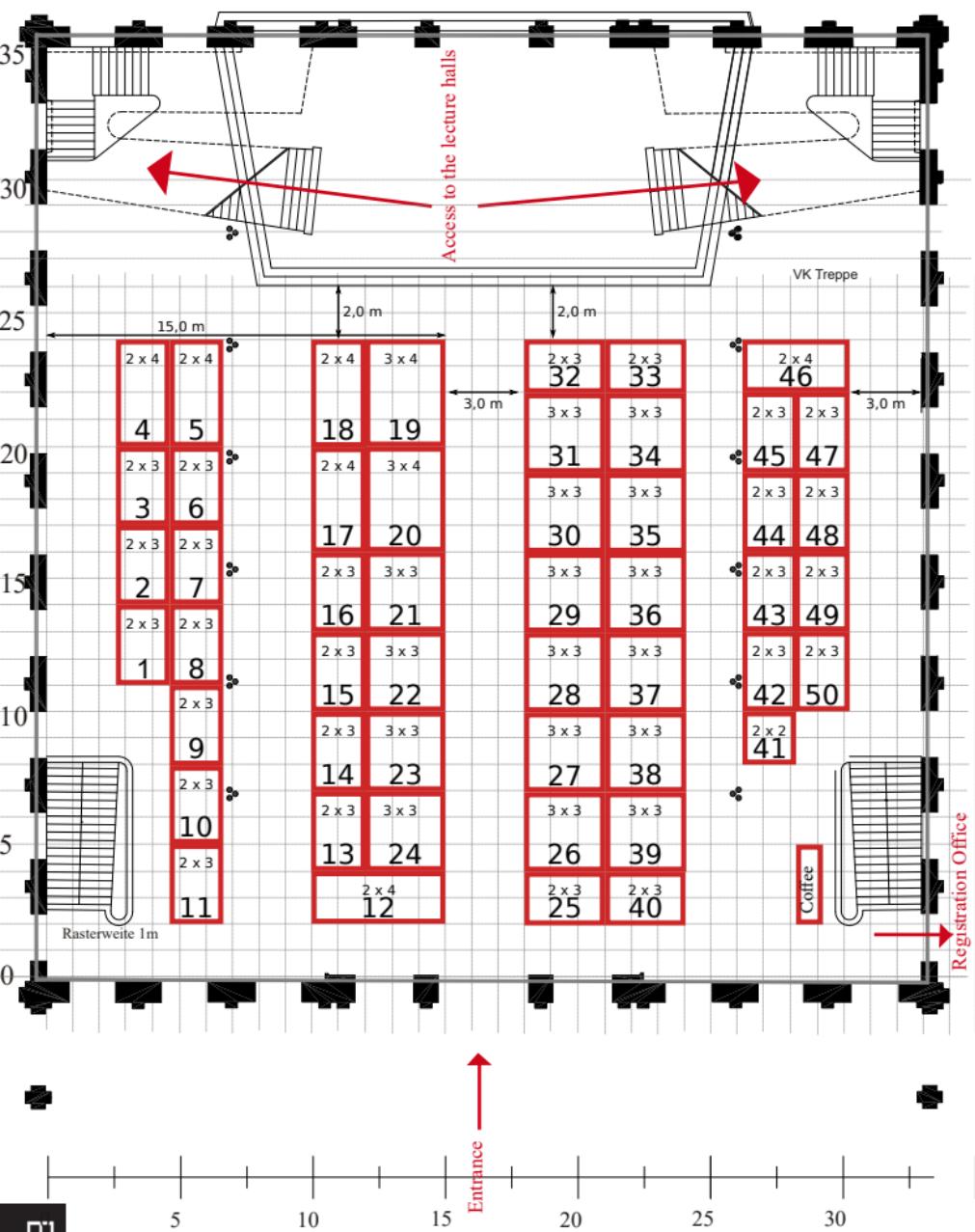
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Stand Map Exhibition Hannover 2023

Leibniz Universität Hannover, Welfengarten 1, 30169 Hannover



Overview Lecture Rooms / Campus

Hörsaalliste / Lecture Rooms

SAMOP

Hauptgebäude Welfengarten 1

Lichthof

Empore Lichthof

A320

B302

B305

F102

F107

F128

F142

F303

F335 (Senatssitzungssaal)

F342 (kleiner Physikhörsaal)

F428

F442

E001

E214 (großer Physikhörsaal)

E415 (Audimax)

Fachverband Didaktik / Physics Education Division

Verfügungsgebäude Schneiderberg 50

DD 108

DD 110

DD 111

DD 203

DD 205

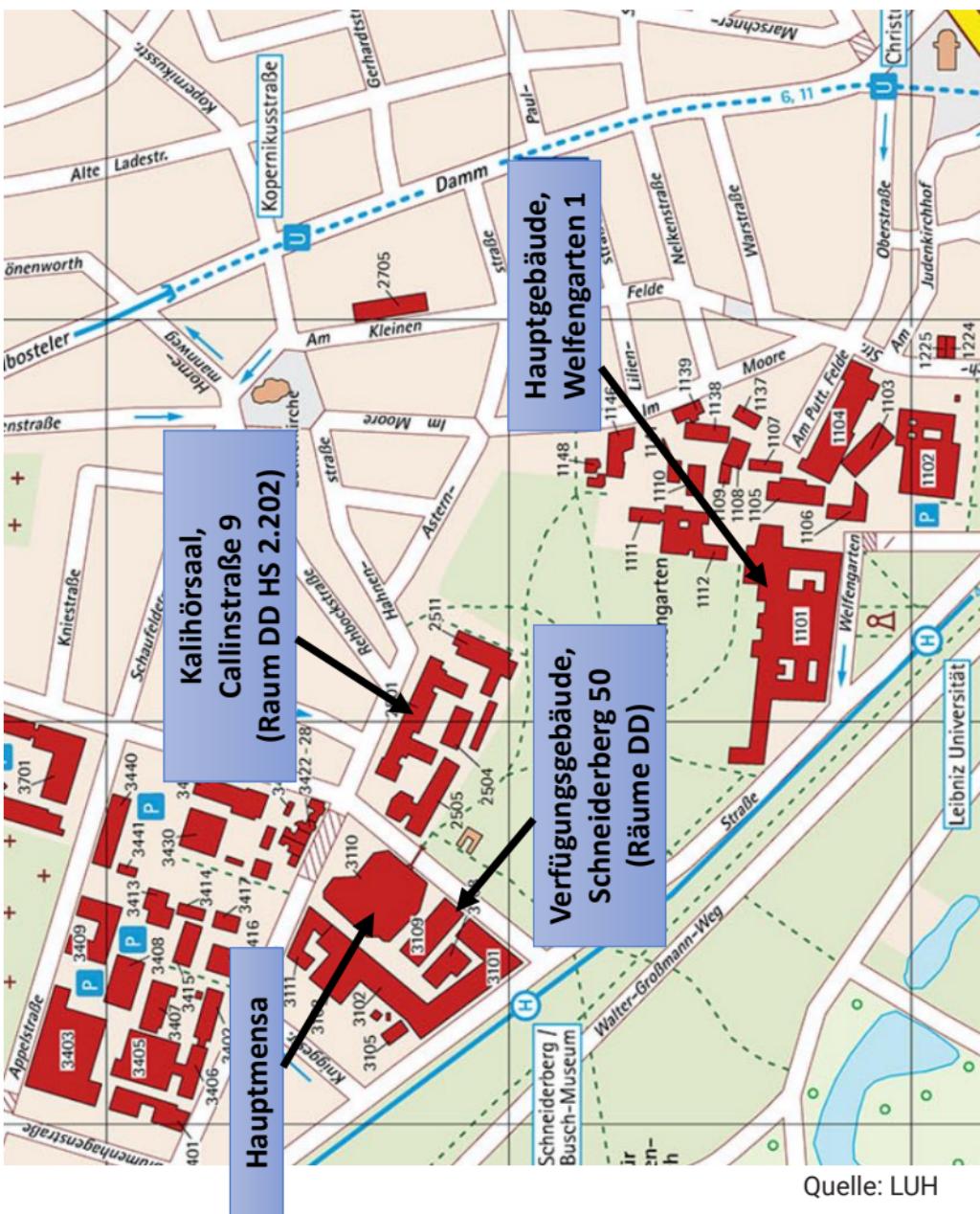
DD 309 (Kaffee)

DD 405

DD 407

Altbau Chemie, Callinstraße 9

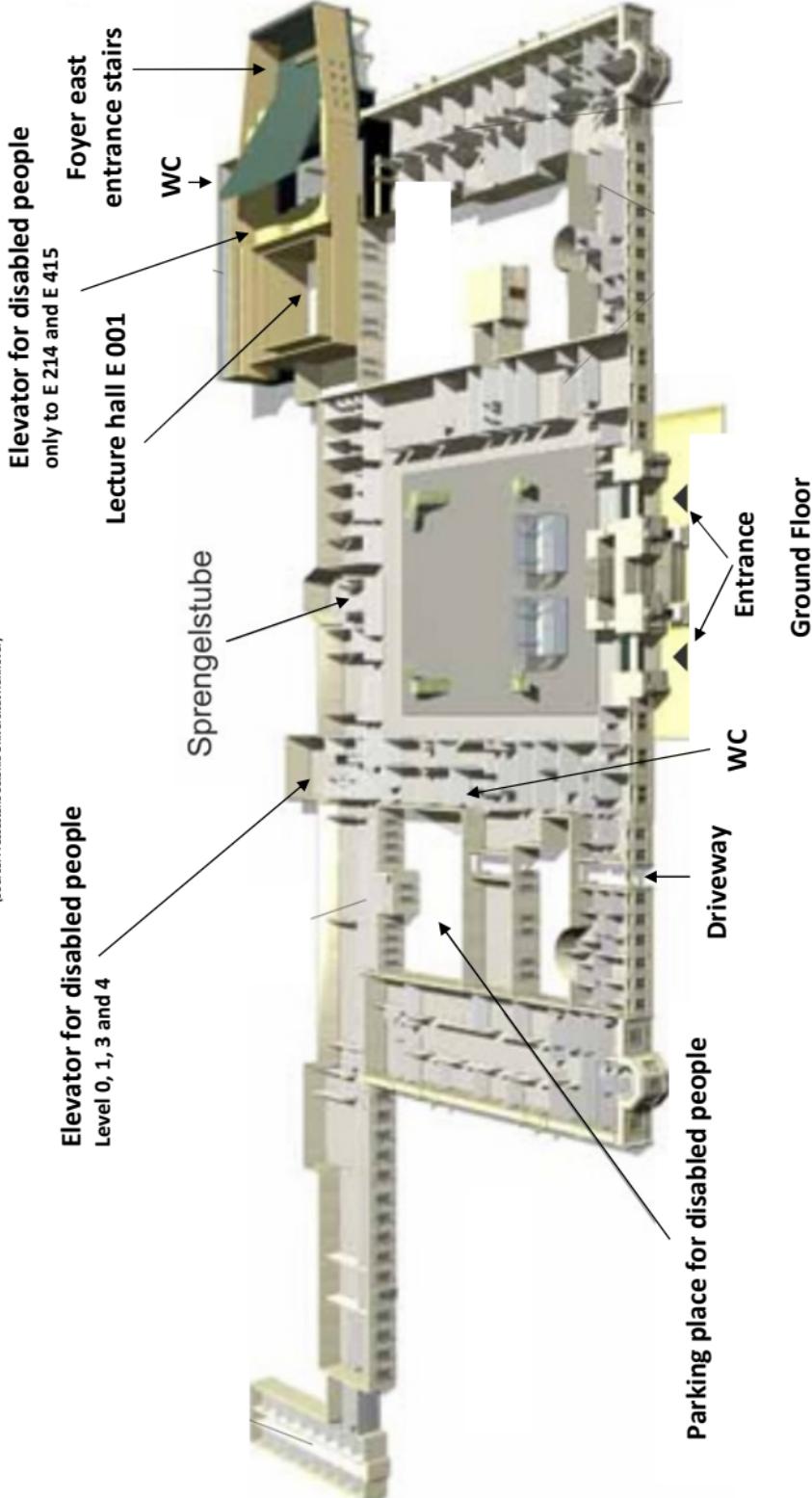
DD HS 2.202 (Kalihörsaal)



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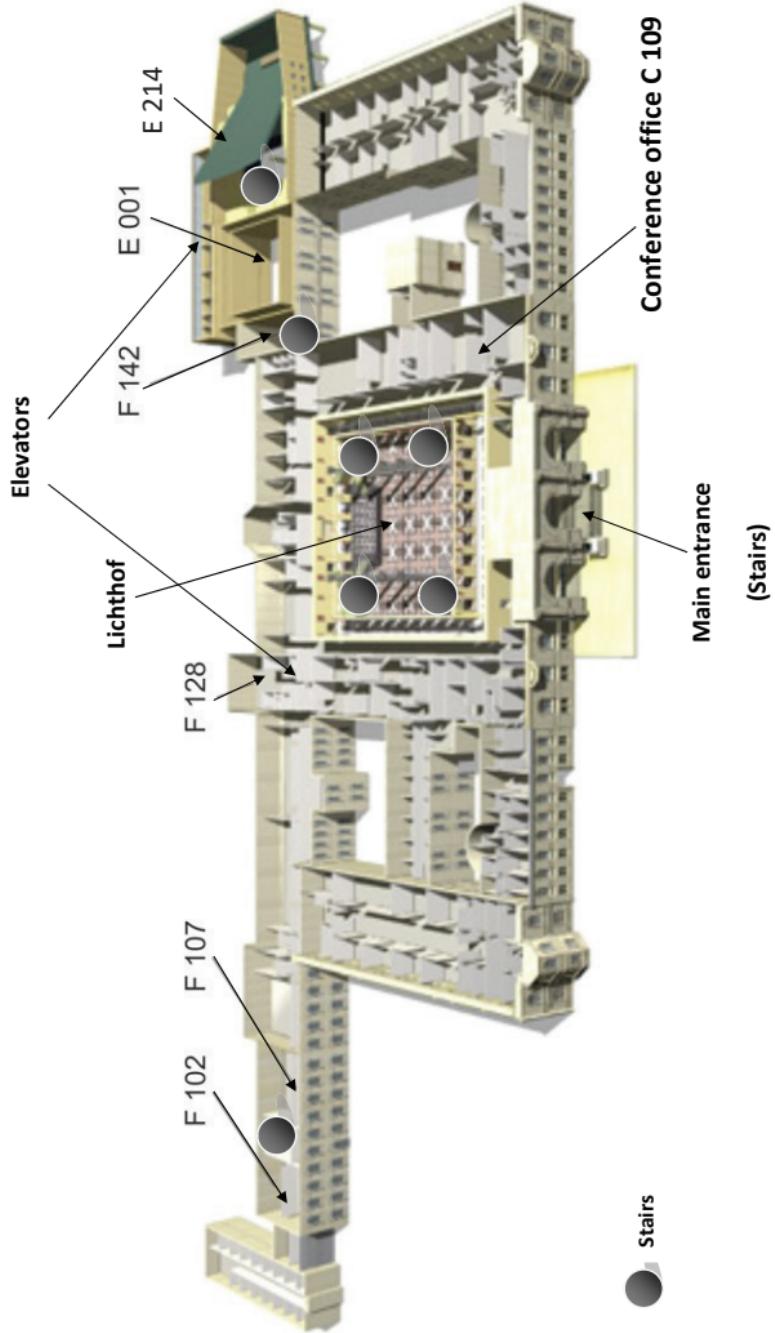
Map Level 0 and Guide for disabled persons

(Source: Pressestelle Leibniz Universität Hannover)



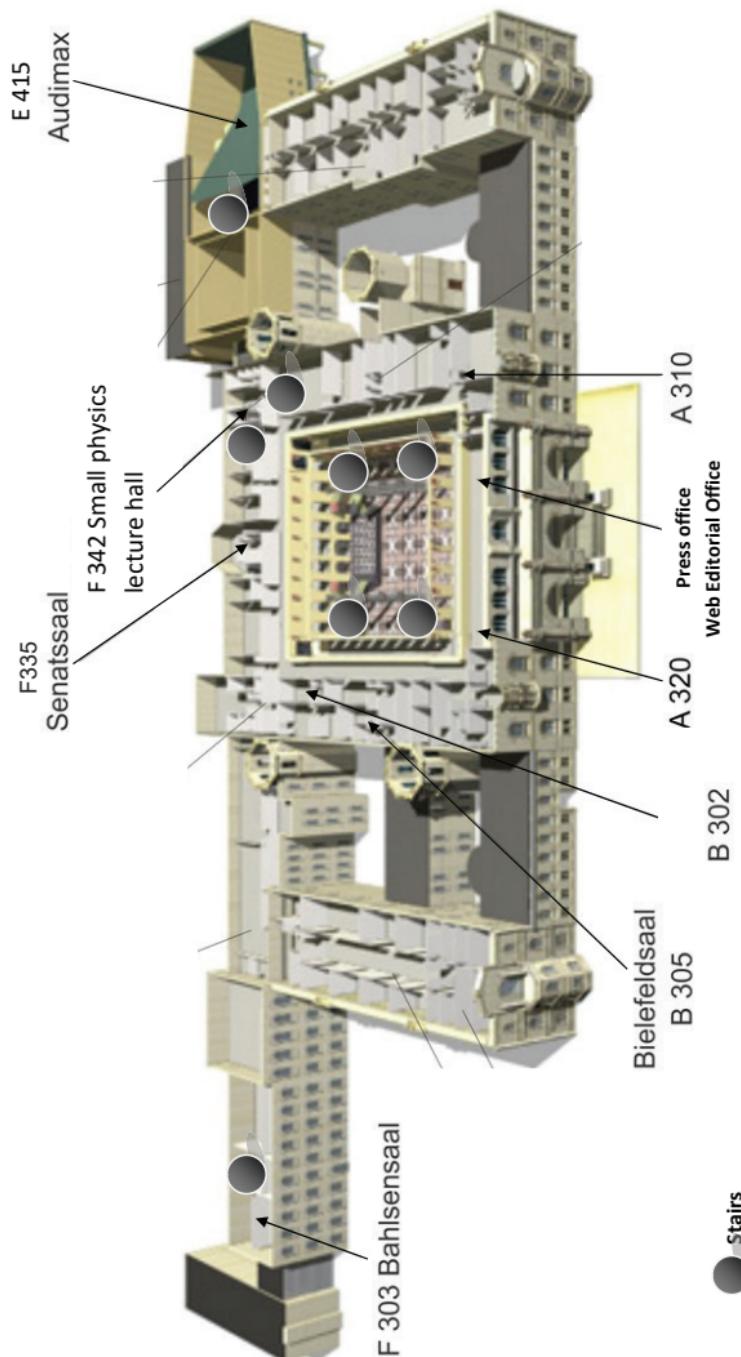
Map Level 1

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Map Level 3

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Map Level 4

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