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Academic Appointments and Research Experience

Leibniz Universität Hannover and PTB, Braunschweig W3 Professor (Quantum Information Processing with Trapped Ions)	Since January 2023
Graduate School of Engineering Science, University of Osaka, Japan Guest Professor	Since April 2017
Leibniz Universität Hannover and PTB, Braunschweig W2 Professor (Experimental Quantum Optics)	November 2010 – December 2022
National Institute of Standards and Technology, Boulder, CO Guest researcher, ion storage group (with Dr. D. J. Wineland) <i>Trapped-ion quantum information processing</i>	February 2007 – November 2010
University of Hamburg, Germany Graduate research assistant Advisor: Prof. Dr. K. Sengstock <i>Quantum-degenerate Fermi-Bose mixtures and ultracold molecules in 3D optical lattices</i>	February 2002 – December 2006
University of Duisburg-Essen, Germany Research assistant Advisor: Prof. Dr. M. Rumpf <i>Boundary element solvers for phase separation problems in binary alloys</i>	November 2001 – January 2002

**University of Fribourg, Switzerland and
University of Bonn, Germany** November 2000 –
October 2001
Diploma thesis (external thesis, University of Bonn,
performed at the University of Fribourg, Switzerland)
Advisor: Prof. Dr. A. Weis
Measurement of the forbidden tensor polarizability of ^{133}Cs

Max-Planck Institute for Plasma Physics, Greifswald, Germany March – April 2000
Summer student
Advisors: Prof. Dr. J. Nührenberg and Dr. R. Schneider
Numerical simulations for plasma boundary layers

Academic Offers

Assistant Professor (tenure track), Stanford University (2009 / 2010)

Professor W2 (Experimental Quantum Optics), Leibniz Universität Hannover and PTB, Braunschweig

Honors and Awards

Falling Walls Winner, Physical Sciences 2021

ERC Starting Grant “QLEDS” 2013
European Research Council

United States Department of Commerce June 2008
Boulder Laboratories Postdoctoral Poster Symposium
Outstanding Presentation Award

SAMOP PhD prize March 2007
PhD Prize, AMOP Division of the German Physical Society
(together with S. Ospelkaus)

PhD prize, University of Hamburg 2007

Education

University of Hamburg, Germany December 21st, 2006
Dr. rer. nat. (summa cum laude)
Thesis title: *Fermi-Bose mixtures – from mean-field interactions to ultracold chemistry*

University of Bonn, Germany October 2001
Dipl.-Phys.
Thesis title: *Measurement of the electric tensor polarizability of the ^{133}Cs ground state*

Städt. Gymnasium Grotenbach, Gummersbach, Germany June 1995
Abitur

Civil Service

Helen-Keller-Schule, Wiehl, Germany

July 1995 – July 1996

Alternative civilian service at a school for mentally disabled children

Selected Funding

BMBF clusters4future QVLS-iLabs (coordinator)

2023

Innovation network on quantum technologies

Selected as one of 7 projects out of 117 applications.

Funding comprises the conception phase and a first implementation phase with a funding sum of 15 M€ over the first three years.

EU Flagship Projekt Millenion

2023

Integration of 2D Ion traps into a quantum computer demonstrator with a focus on direct scalability

BMBF ATIQ Quantencomputer-Demonstrationsaufbauten (coordinator)

2021

(19 partners in academia and industry)

Brings together major ion-trap QC groups in Germany with QC users and technology developers to push the limit of ion-trap QC

Total volume 44.5 M€, LUH team funded with 6.37 M€

BMBF QuMIC

2021

Trap-integrated cryogenic microwave sources for controlling trapped-ion qubits and Josephson arbitrary waveform synthesizers (LUH, PTB, TUBS, Infineon, Supracon)

LUH team funded with 770 k€

BMBF Zukunftscluster QVLS iLabs

2021

Selected for Clusters4Future concept phase

BMBF MIQRO

2021

“Skalierbarer Quantencomputer mit Hochfrequenz-gesteuerten gespeicherten Ionen“

PI of LUH team (funded with 8.5 M€)

QVLS-Q1 (VW Foundation, MWK Niedersachsen)

2021

(Quantum Valley Lower Saxony Q1)

“A 50-Qubit Quantum Processor based on Trapped-Ion Technology”

Co-Speaker (funded with 25 M€)

Collaborative research center SFB / CRC 1227 “DQ-mat”

2020

“Designed quantum states of matter”, second funding period

Board member and member of nucleus team that wrote the grant application

PI of projects A01 and B06

EU QT flagship consortium “MicroQC”

2018

PI of LUH team (funded with 0.55 M€)

DFG Cluster of Excellence “Quantum Frontiers” Principal investigator, science board member and coordinator of research unit A05	2018
Collaborative research center SFB / CRC 1227 “DQ-mat” “Designed quantum states of matter”, first funding period Board member and member of nucleus team that wrote the grant application PI of projects A01 and B06, funded with 1.4 M€	2016
DFG Infrastructure Grant “Apparatur für kryogene Penningfallen” (0.45 M€)	2013
ERC StG “QLEDS” European Research Council (1.6 M€)	2013

Referee

Nature, Science, Physical Review, Springer, IOP, OSA, DPG, ANR, CDG, ARO, EPSRC, DFF, SNF.

Membership

APS, EPS, DFG

Service to the university and community

Member of the strategic advisory board of QVLS e.V.	2021 –
Virtual Seminar on Precision Physics and Fundamental Symmetries	2020 -
Science board, cluster of excellence “Quantum Frontiers”	2019 -
Research unit A5 leader, cluster of excellence “Quantum Frontiers”	2019 –
Organization of “EQLIPS” workshop, University of Hannover	2018
Board member, SFB 1227 DQ- <i>mat</i> and member of core team	2016 -
Board member, Laboratory for Nano and Quantum Engineering	2016 -
Chair of examination board, faculty of mathematics and physics	2016 –
Organizer, Heraeus seminar “Designed Quantum States of Matter”	2014
Faculty board, faculty of mathematics and physics	2013 - 2015
Teaching commission, faculty of mathematics and physics	2011 – 2013
Local organizer, ICOLS, Aerzen	2011

Patents

A. Bautista-Salvador, C. Ospelkaus, M. Wahnschaffe, and J. Morgner,
„Verfahren zum Herstellen einer Atomfalle sowie Atomfalle“,

DE 10 2018 111 220 B3 (23 May 2019),
EP3791408.

Teaching sample

See my online lecture “Electricity and Relativity” in the summer term 2020. This is a second semester experimental physics course covering electricity, magnetism and an introduction to relativity, held online due to the COVID pandemic. The lecture consists of short explanatory videos (per subject), illustrated by demonstration experiments recorded in the main physics lecture hall. In addition to this content, there was a zoom meeting every Friday, held in front of a different virtual background every week, to answer open questions and stimulate discussions. Recordings of these zoom meetings are at the end of the playlist. The students could take part in a contest to guess the virtual background of each week; there were prizes for the highest scoring participants. This increased the motivation for students to get in touch and provide feedback. PPTX slides are available on request.

<https://flowcasts.uni-hannover.de/channels/doEIV>

Publications, preprints, manuscripts and refereed proceedings

The google scholar profile is available [here](#).

B.M. Latacz, B.P. Arndt, B.B. Bauer, J.A. Devlin, S.R. Erlewein, M. Fleck, J.I. Jäger, M. Schiffelholz, G. Umbrazunas, E.J. Wursten, F. Abbass, P. Micke, D. Popper, M. Wiesinger, C. Will, H. Yildiz, K. Blaum, Y. Matsuda, A. Mooser, C. Ospelkaus, W. Quint, A. Soter, J. Walz, Y. Yamazaki, C. Smorra, S. Ulmer, “High-Precision Comparisons of the Fundamental Properties of Protons and Antiprotons”, [Eur. Phys. J. D 77, 94 \(2023\)](#).

T. Schmale, B. Temesi, A. Baishya, N. Pulido-Mateo, L. Krinner, T. Dubielzig, C. Ospelkaus, H. Weimer, and D. Borchert, “Backend Compiler Phases for Trapped-Ion Quantum Computers” [2022 IEEE International Conference on Quantum Software \(QSW\), pp. 32-37 \(2022\)](#).

M. Schubert, L. Kilzer, T. Dubielzig, M. Schilling, C. Ospelkaus, and B. Hampel, “Active Impedance Matching of a Cryogenic Radio Frequency Resonator for Ion Traps”, [Review of Scientific Instruments 93, 093201 \(2022\)](#).

F. Völksen, J.A. Devlin, M.J. Borchert, S.R. Erlewein, M. Fleck, J.I. Jäger, B.M. Latacz, P. Micke, P. Nuschke, G. Umbrazunas, E.J. Wursten, F. Abbass, M.A. Bohman, D. Popper, M. Wiesinger, C. Will, K. Blaum, Y. Matsuda, A. Mooser, C. Ospelkaus, C. Smorra, A. Soter, W. Quint, J. Walz, Y. Yamazaki, S. Ulmer, “A High-Q Superconducting Toroidal Medium Frequency Detection System with a Capacitively Adjustable Frequency Range >180 KHz”, [Review of Scientific Instruments 93, 093303 \(2022\)](#).

C. Will, M. Bohman, T. Driscoll, M. Wiesinger, F. Abbass, M.J. Borchert, J.A. Devlin, S. Erlewein, M. Fleck, B. Latacz, R. Moller, A. Mooser, D. Popper, E. Wursten, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, C. Smorra, S. Ulmer, “Sympathetic Cooling Schemes for Separately Trapped Ions Coupled via Image Currents”, [New J. Phys. 24, 033021 \(2022\)](#).

M.J. Borchert, J.A. Devlin, S.E. Erlewein, M. Fleck, J.A. Harrington, T. Higuchi, B. Latacz, F. Voelksen, E. Wursten, F. Abbass, M. Bohman, A. Mooser, D. Popper, C. Will, M. Wiesinger, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, C. Smorra, and S. Ulmer, “Comparison of the Proton/Antiproton Charge-to-Mass Ratio at 16 Parts per Trillion Precision”, [Nature 601, 53 \(2022\)](#).

M. Duwe, G. Zarantonello, N. Pulido-Mateo, H. Mendpara, L. Krinner, A. Bautista-Salvador, N. V. Vitanov, K. Hammerer, R. F. Werner, C. Ospelkaus, “Numerical optimization of amplitude-modulated pulses in microwave-driven entanglement generation”, [Quantum Science and Technology 7, 045005 \(2022\)](#).

M. Bohman, V. Grunhofer, C. Smorra, M. Wiesinger, C. Will, M.J. Borchert, J.A. Devlin, S. Erlewein, M. Fleck, S. Gavranovic, J. Harrington, B. Latacz, A. Mooser, D. Popper, E. Wursten, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, and S. Ulmer (BASE collaboration), “Sympathetic cooling of a trapped proton mediated by an LC circuit”, [Nature 596, 514 \(2021\)](#).

J. A. Devlin, M. J. Borchert, S. Erlewein, M. Fleck, J. A. Harrington, B. Latacz, J. Warncke, E. Wursten, M. A. Bohman, A. H. Mooser, C. Smorra, M. Wiesinger, C. Will, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, and S. Ulmer,
“Constraints on the Coupling between Axionlike Dark Matter and Photons Using an Antiproton Superconducting Tuned Detection Circuit in a Cryogenic Penning Trap”,
[Phys. Rev. Lett. **126**, 041301 \(2021\)](#).

J. Mielke, J. Pick, J. A. Coenders, T. Meiners, M. Niemann, J. M. Cornejo, S. Ulmer, and C. Ospelkaus,
“139 GHz UV Phase-Locked Raman Laser System for Thermometry and Sideband Cooling of $^9\text{Be}^+$ Ions in a Penning Trap”,
[Accepted for publication in J Phys B: At Mol Opt Phys](#).

J. M. Cornejo, J. Mielke, T. Meiners, D. Nitzschke, M. Schulte, M. J. Borchert, M. Niemann, A. Bautista-Salvador, R. Lehnert, K. Hammerer, S. Ulmer, and C. Ospelkaus,
“Quantum Logic Inspired Techniques for Spacetime-Symmetry Tests with (Anti-)Protons”,
[New Journal of Physics **23**, 073045 \(2021\)](#).

T. Dubielzig, S. Halama, H. Hahn, G. Zarantonello, M. Niemann, A. Bautista-Salvador, and C. Ospelkaus,
“Ultra-Low-Vibration Closed-Cycle Cryogenic Surface-Electrode Ion Trap Apparatus”,
[Review of Scientific Instruments **92**, 043201 \(2021\)](#).

U. Tanaka, M. Nakamura, K. Hayasaka, A. Bautista-Salvador, C. Ospelkaus, and T. E. Mehlstäubler,
“Creation of Double-Well Potentials in a Surface-Electrode Trap towards a Nanofriction Model Emulator”,
[Quantum Sci. Technol. **6**, 024010 \(2021\)](#).

D. Nitzschke, M. Schulte, M. Niemann, J. M. Cornejo, S. Ulmer, R. Lehnert, C. Ospelkaus, and K. Hammerer,
“Elementary Laser-Less Quantum Logic Operations with (Anti-)Protons in Penning Traps”,
[Advanced Quantum Technologies **9**, 1900133 \(2020\)](#).

M. Raghunandan, F. Wolf, C. Ospelkaus, P. O. Schmidt, and H. Weimer,
“Initialization of Quantum Simulators by Sympathetic Cooling”,
[Science Advances **6**, eaaw9268 \(2020\)](#).

G. Zarantonello, H. Hahn, J. Morgner, M. Schulte, A. Bautista-Salvador, R. F. Werner, K. Hammerer, and C. Ospelkaus,
“Robust and Resource-Efficient Microwave Near-Field Entangling $^9\text{Be}^+$ Gate”,
[Phys. Rev. Lett. **123**, 260503 \(2019\)](#).

H. Hahn, G. Zarantonello, M. Schulte, A. Bautista-Salvador, K. Hammerer, and C. Ospelkaus,
“Integrated $^9\text{Be}^+$ multi-qubit gate device for the ion-trap quantum computer”,
[Npj Quantum Inf **5**, 70 \(2019\)](#).

A.-G. Paschke, G. Zarantonello, H. Hahn, T. Lang, C. Manzoni, M. Marangoni, G. Cerullo, U. Morgner, and C. Ospelkaus,
“Versatile Control of $^9\text{Be}^+$ Ions Using a Spectrally Tailored UV Frequency Comb”,
[Physical Review Letters **122**, 123606 \(2019\)](#).

A. Bautista-Salvador, G. Zarantonello, H. Hahn, A. Preciado-Grijalva, J. Morgner, M. Wahnschaffe, and C. Ospelkaus,

„Multilayer Ion Trap Technology for Scalable Quantum Computing and Quantum Simulation“,
[New Journal of Physics **21**, 043011 \(2019\).](#)

H. Hahn, G. Zarantonello, A. Bautista-Salvador, M. Wahnschaffe, M. Kohnen, J. Schoebel, P. O. Schmidt, and Christian Ospelkaus,

“Multilayer ion trap with three-dimensional microwave circuitry for scalable quantum logic applications“,
[Appl. Phys. B **125**, 154 \(2019\).](#)

C. Smorra, Y. V. Stadnik, P. E. Blessing, M. Bohman, M. J. Borchert, J. A. Devlin, S. Erlewein, J. A. Harrington, T. Higuchi, A. Mooser, G. Schneider, M. Wiesinger, E. Wursten, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, D. Budker, and S. Ulmer,

“Direct Limits on the Interaction of Antiprotons with Axion-like Dark Matter“,
[Nature **575**, 310 \(2019\).](#)

M. J. Borchert, P. E. Blessing, J. A. Devlin, J. A. Harrington, T. Higuchi, J. Morgner, C. Smorra, E. Wursten, M. Bohman, M. Wiesinger, A. Mooser, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki and S. Ulmer,

“Measurement of Ultralow Heating Rates of a Single Antiproton in a Cryogenic Penning Trap“,
[Physical Review Letters **122**, 043201 \(2019\).](#)

M. Niemann, T. Meiners, J. Mielke, N. Pulido, J. Schaper, M. j. Borchert, J. m. Cornejo, A.-G. Paschke, G. Zarantonello, H. Hahn, T. Lang, C. Manzoni, M. Marangoni, G. Cerullo, U. Morgner, J.-A. Fenske, A. Bautista-Salvador, R. Lehnert, S. Ulmer, and C. Ospelkaus,

“Cryogenic Penning-Trap Apparatus for Precision Experiments with Sympathetically Cooled (Anti)Protons“,

in [CPT and Lorentz Symmetry \(WORLD SCIENTIFIC, 2019\), pp. 114–117.](#)

M. Niemann, T. Meiners, J. Mielke, M. J. Borchert, J. M. Cornejo, S. Ulmer, and C. Ospelkaus,

“Cryogenic ${}^9\text{Be}^+$ Penning Trap for Precision Measurements with (Anti-)Protons“,
[Meas. Sci. Technol. **31**, 035003 \(2019\).](#)

T. Leopold, S. A. King, P. Micke, A. Bautista-Salvador, J. C. Heip, C. Ospelkaus, J. R. Crespo López-Urrutia, and P. O. Schmidt,

“A cryogenic radio-frequency ion trap for quantum logic spectroscopy of highly charged ions“,
[Review of Scientific Instruments **90**, 073201 \(2019\).](#)

S. Hannig, J. Mielke, J. A. Fenske, M. Misera, N. Beev, C. Ospelkaus, and P. O. Schmidt,

“A Highly Stable Monolithic Enhancement Cavity for Second Harmonic Generation in the Ultraviolet“,
[Review of Scientific Instruments **89**, 013106 \(2018\).](#)

C. Smorra, S. Sellner, M. J. Borchert, J. A. Harrington, T. Higuchi, H. Nagahama, T. Tanaka, A. Mooser, G. Schneider, M. Bohman, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, and S. Ulmer,

“A Parts-per-Billion Measurement of the Antiproton Magnetic Moment.“,
[Nature **550**, 371 \(2017\).](#)

H. Nagahama, C. Smorra, S. Sellner, J. Harrington, T. Higuchi, M. J. Borchert, T. Tanaka, M. Besirli, A. Mooser, G. Schneider, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, and S. Ulmer,

“Sixfold Improved Single Particle Measurement of the Magnetic Moment of the Antiproton”,
[Nature Communications **8**, 14084 \(2017\)](#).

S. Sellner, M. Besirli, M. Bohman, M. J. Borchert, J. Harrington, T. Higuchi, A. Mooser, H. Nagahama, G. Schneider, T. Tanaka, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, and S. Ulmer,

“Improved Limit on the Directly Measured Antiproton Lifetime”,
[New Journal of Physics **19**, 083023 \(2017\)](#).

C. Smorra, A. Mooser, M. Besirli, M. Bohman, M. J. Borchert, J. Harrington, T. Higuchi, H. Nagahama, G. L. Schneider, S. Sellner, T. Tanaka, , K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, and S. Ulmer,

“Observation of Individual Spin Quantum Transitions of a Single Antiproton”,
[Physics Letters B **769**,1 \(2017\)](#).

M. Wahnschaffe, H. Hahn, G. Zarantonello, T. Dubielzig, S. Grondkowski, A. Bautista-Salvador, M. Kohnen, and C. Ospelkaus,

“Single-ion microwave near-field quantum sensor”,
[Appl. Phys. Lett. **110**, 034103 \(2017\)](#).

H. Nagahama, G. Schneider, A. Mooser, C. Smorra, S. Sellner, J. Harrington, T. Higuchi, M. Borchert, T. Tanaka, M. Besirli, K. Blaum, Y. Matsuda, C. Ospelkaus, W. Quint, J. Walz, Y. Yamazaki, and S. Ulmer,
“Highly Sensitive Superconducting Circuits at ~700 KHz with Tunable Quality Factors for Image-Current Detection of Single Trapped Antiprotons.”,

[Review of Scientific Instruments **87**, 113305 \(2016\)](#).

J. M. Cornejo, M. J. Gutiérrez, E. Ruiz, A. Bautista-Salvador, C. Ospelkaus, S. Stahl, and D. Rodríguez,
“An Optimized Geometry for a Micro Penning-Trap Mass Spectrometer Based on Interconnected Ions”,

[International Journal of Mass Spectrometry **410**, 22 \(2016\)](#).

C. Smorra, K. Blaum, L. Bojtar, M. Borchert, K. A. Franke, T. Higuchi, N. Leefer, H. Nagahama, Y. Matsuda, A. Mooser, M. Niemann, C. Ospelkaus, W. Quint, G. Schneider, S. Sellner, T. Tanaka, S. Van Gorp, J. Walz, Y. Yamazaki, and S. Ulmer,

“BASE – The Baryon Antibaryon Symmetry Experiment”,
[The European Physical Journal Special Topics **224**, 1 \(2015\)](#).

M. Carsjens, M. Kohnen, T. Dubielzig, and C. Ospelkaus,

“Surface-electrode Paul trap with optimized near-field microwave control”,
[Appl. Phys. B **114**, 243 \(2014\)](#).

C. Smorra, K. Blaum, K. Franke, Y. Matsuda, A. Mooser, H. Nagahama, C. Ospelkaus, W. Quint, G. Schneider, S. V. Gorp, J. Walz, Y. Yamazaki, and S. Ulmer,

“Towards a high-precision measurement of the antiproton magnetic moment”,
[Hyperfine Interact. **228**, 31 \(2014\)](#).

C. Ospelkaus, U. Warring, and Y. Colombe,

"Qubits in der Mikrowelle",

[Physik in unserer Zeit **45**, 72 \(2014\).](#)

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[J. Phys.: Conf. Ser. **488**, 12033 \(2014\).](#)

U. Warring, C. Ospelkaus, Y. Colombe, R. Jördens, D. Leibfried, and D. J. Wineland,

"Individual-Ion Addressing with Microwave Field Gradients",

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U. Warring, C. Ospelkaus, Y. Colombe, K. R. Brown,

J. M. Amini, M. Carsjens, D. Leibfried, and D. J. Wineland,

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"Microwave quantum logic gates for trapped ions",

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K. R. Brown, C. Ospelkaus, Y. Colombe, A. C. Wilson, D. Leibfried, and D. J. Wineland,

"Coupled quantized mechanical oscillators",

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[Phys. Rev. A **84**, 030303 \(2011\).](#)

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M. J. Biercuk, D. Leibfried, and D. J. Wineland,

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"A 750-mW, continuous-wave, solid-state laser source at 313 nm for cooling and manipulating trapped ${}^9\text{Be}^+$ ions",

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R. B. Blakestad, C. Ospelkaus, A. P. VanDevender, J. M. Amini, J. Britton, D. Leibfried, and D. J. Wineland,
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D. Leibfried, E. Knill, C. Ospelkaus, and D. J. Wineland,
"Transport quantum logic gates for trapped ions",
[Phys. Rev. A **76**, 032324 \(2007\).](#)

C. Ospelkaus,
"Fermi-Bose mixtures -- From mean-field interactions to ultracold chemistry",
[PhD Thesis, Universität Hamburg \(2006\).](#)

C. Ospelkaus, S. Ospelkaus, L. Humbert, P. Ernst, K. Sengstock, and K. Bongs,
"Ultracold Heteronuclear Molecules in a 3D Optical Lattice",
[Phys. Rev. Lett. **97**, 120402 \(2006\).](#)

S. Ospelkaus, C. Ospelkaus, O. Wille, M. Succo, P. Ernst, K. Sengstock, and K. Bongs,
"Localization of Bosonic Atoms by Fermionic Impurities in a Three-Dimensional Optical Lattice",
[Phys. Rev. Lett. **96**, 180403 \(2006\)](#).

S. Ospelkaus, C. Ospelkaus, L. Humbert, K. Sengstock, and K. Bongs,
"Tuning of Heteronuclear Interactions in a Degenerate Fermi-Bose Mixture",
[Phys. Rev. Lett. **97**, 120403 \(2006\)](#).

C. Ospelkaus, S. Ospelkaus, K. Sengstock, and K. Bongs,
*"Interaction-Driven Dynamics of ^{40}K - ^{87}Rb Fermion-Boson
Gas Mixtures in the Large-Particle-Number Limit"*,
[Phys. Rev. Lett. **96**, 020401 \(2006\)](#).

C. Ospelkaus, U. Rasbach, and A. Weis,
*"Measurement of the forbidden tensor polarizability of Cs
using an all-optical Ramsey resonance technique"*,
[Phys. Rev. A **67**, 011402 \(2003\)](#).

Invited Talks and Seminar

Fraunhofer-IAF industry workshop on quantum computing, January 2020

CAMNP, Delhi, December 2019

Panel discussion at DPG quantum technologies fall meeting, October 2019

QION workshop, Tel Aviv, September 2019

CAMEL15, Nessebar, Bulgaria, June 2019

Eighth Meeting on CPT and Lorentz Symmetry, Bloomington, Indiana, May 2019

WE Heraeus meeting "Engineering a Scalable Quantum Computer", Bad Honnef, April 2019

University of Osaka, lecture series on quantum information processing and precision
experiments in October 2018

CAMEL13, Nessebar, Bulgaria, June 2017

Gordon Research Conference on Atomic Physics, Newport, RI, USA, June 2017

FBH Berlin colloquium, June 2017

DPG spring meeting Mainz, March 2017

Universität Freiburg Colloquium, October 2016

Seventh Meeting on CPT and Lorentz Symmetry, Bloomington, Indiana, June 2016

LEAP (Low Energy AntiProtons), Kanazawa, Japan, March 2016

Atomic Physics Seminar, GSI, December 2015

WE Heraeus seminar "Microwaves go quantum", December 2015

Osaka University, October 2015

IUCSS Workshop on Signals for Nonminimal Lorentz and CPT Violation, Bloomington, Indiana, June 2015

QION workshop, Tel Aviv, March 2015

FLAIR meeting Heidelberg, May 2015

Bothe-Kolloquium, MPIK, Heidelberg, Januar 2014

Imperial College, London, GB, December 2013

IonTech, Paris, France, October 2013

CPT13, Bloomington, Indiana, USA, June 2013

QION13 workshop, Obergurgl, Austria, April 2013

EQuS workshop, Woollongong, Australia, December 2012

Euro Conference on Trapped Ions, Obergurgl, Austria, September 2012

FLAIR workshop, GSI, Darmstadt, May 2012

International Conference on Quantum Optics, Obergurgl, Austria, 01/15/2012

Winter Colloquium "The Physics of Quantum Electronics", Snowbird, Utah, 01/06/2012

Keynote, Quantum Technologies II, Krakow, Poland, 08/31/2011

Hot Topic Talk, International Conference on Laser Spectroscopy, Aenzen, Germany, 06/02/2011

GRK Colloquium, Universität Hamburg, 05/31/2011

São Paulo School of Advanced Science "New Trends in Quantum Matter With Cold Atoms and Molecules". São Carlos, Brazil, 04/04/2011-04/14/2011

SQuInT Network meeting: *Quantum information processing with trapped ions at NIST*, Boulder, CO, 02/20/2011

Minerva-Weizmann Workshop on Entanglement in Atomic Systems: *Microwave Near-Field Quantum Control of Trapped-Ion Qubits*. Tel Aviv, Israel, 11/22/2010

NIST Time and Frequency Division Seminar: *Microwave Near-Field Quantum Control of Trapped-Ion Qubits*, Boulder, CO, 10/21/2010

JILA tri-group seminar, Boulder, CO, 10/04/2010

Colloquium at Leibniz Universität Hannover: "Integrated quantum information processing with trapped ions". Hannover, 06/25/2010

Seminar at Sandia National Laboratories: Near field quantum logic with trapped ions. Albuquerque, NM, 04/15/2010

Colloquium at PTB, Braunschweig: Nahfeld-Quantenlogik mit gespeicherten Ionen. Braunschweig, 11/25/2009

Stanford Physics Seminar: Integrated Quantum Information Processing with Trapped Ions, Stanford University, 08/10/2009

Integrated Quantum Information Processing with Trapped Ions, ICFO (Barcelona),
03/19/2009

C. Ospelkaus: "Heteronuclear Molecules in a 3D Optical Lattice", March Meeting of the
American Physical Society, New Orleans, Louisiana, March 10-14, 2008, P7.00005 (invited)

S. Ospelkaus, C. Ospelkaus: "Fermi-Bose mixtures with tunable interactions in 3D optical
lattices", AMOP-Frühjahrstagung der Deutschen Physikalischen Gesellschaft, Düsseldorf,
March 24-28, 2007, Verhandl. DPG(VI), 42, SYDP1.4 (Hauptvortrag, invited)

C. Ospelkaus: "Ultracold Heteronuclear Molecules in a 3D Optical Lattice", 379. Wilhelm und
Else Heraeus-Seminar on Cold Molecules, Bad Honnef, Germany, October 29 – November 2,
2006 (invited)

Tuning of heteronuclear interactions in a quantum-degenerate Fermi-Bose mixture, MIT,
Boston, 05/26/2005