

Summary

- **>210 publications**, thereof
**47 Nature/Science, 108 Physical Review Letters/Nature Physics/
Physical Review X/PNAS**
- **Citation Metrics:**
Google Scholar citations: **(total) > 81.600, h-index: 116**

List of Publications

- 211 A. Impertro, S. Huh, S. Karch, J. F. Wienand, I. Bloch, M. Aidelsburger
Strongly interacting Meissner phases in large bosonic flux ladders
Nature Physics **2025** (2025)
- 210 T. Chalopin, P. Bojović, D. Bourgund, S. Wang, T. Franz, I. Bloch, T. A. Hilker
Optical Superlattice for Engineering Hubbard Couplings in Quantum Simulation
Phys. Rev. Lett. **134**, 053402 (2025)
- 209 D. Bourgund, T. Chalopin, P. Bojovic, H. Schlömer, S. Wang, T. Franz, S. Hirthe, A. Bohrdt, F. Grusdt, I. Bloch, T. A. Hilker
Formation of individual stripes in a mixed-dimensional cold-atom Fermi-Hubbard system
Nature **637**, pp. 57 - 62 (2025)
- 208 H. Schlömer, H. Lange, T. Franz, T. Chalopin, P. Bojovic, S. Wang, I. Bloch, T. A. Hilker, F. Grusdt, A. Bohrdt
Local Control and Mixed Dimensions: Exploring High-Temperature Superconductivity in Optical Lattices
PRX Quantum **5**, 040341 (2024)
- 207 D. Adler, D. Wei, M. Will, K. Srakaew, S. Agrawal, P. Weckesser, R. Moessner, F. Pollmann, I. Bloch, J. Zeiher
Observation of Hilbert space fragmentation and fractonic excitations in 2D
Nature **636**, 80–85 (2024)
- 206 S. Hollerith, V. Walther, K. Srakaew, D. Wei, D. Adler, S. Agrawal, P. Weckesser, I. Bloch, J. Zeiher
Rydberg molecules bound by strong light fields
PRX Quantum **5**, 030335 (2024)
- 205 A. Impertro, S. Karch, J. F. Wienand, S. Huh, C. Schweizer, I. Bloch, M. Aidelsburger
Local readout and control of current and kinetic energy operators in optical lattices
Physical Review Letters **133**, 063401 (2024)
- 204 F. J. Wienand, S. Karch, A. Impertro, C. Schweizer, E. McCulloch, R. Vasseur, S. Gopalakrishnan, M. Aidelsburger, I. Bloch
Emergence of fluctuating hydrodynamics in chaotic quantum systems
Nature Physics **2024** (2024)
- 203 F. Gyger, M. Ammenwerth, R. Tao, H. Timme, S. Snigirev, I. Bloch, J. Zeiher
Continuous operation of large-scale atom arrays in optical lattices
Physical Review Research **6**, 033104 (2024)
- 202 R. Tao, M. Ammenwerth, F. Gyger, I. Bloch, J. Zeiher
High-fidelity detection of large-scale atom arrays in an optical lattice
Physical Review Letters **133**, 013401 (2024)
- 201 Ch. Braun, R. Saint-Jalm, A. Hesse, J. Aceri, I. Bloch, M. Aidelsburger
Real-space detection and manipulation of topological edge modes with ultracold atoms
Nature Physics **2024** (2024)
- 200 V. Klüsener, S. Pucher, D. Yankelev, J. Trautmann, F. Spriestersbach, D. Filin, S. G. Porsev, M. S. Safronova, I. Bloch, S. Blatt
Long-Lived Coherence on a μHz Scale Optical Magnetic Quadrupole Transition

- Physical Review Letters **132**, 253201 (2024)
- 199** S. Pucher, V. Klüsener, F. Spriestersbach, J. Geiger, A. Schindewolf, I. Bloch, S. Blatt
Fine-Structure Qubit Encoded in Metastable Strontium Trapped in an Optical Lattice
Physical Review Letters **132**, 150605 (2024)
- 198** G. Pasqualetti, O. Bettermann, N. Darkwah Oppong, E. Ibarra-García-Padilla, S. Dasgupta, R. Scalettar, K. Hazzard, I. Bloch, S. Fölling
Equation of State and Thermometry of the 2D $SU(N)$ Fermi-Hubbard Model
Physical Review Letters **132**, 083401 (2024)
- 197** X. Chen, S. Biswas, S. Eppelt, A. Schindewolf, F. Deng, T. Shi, S. Yi, T. A. Hilker, I. Bloch, X. Luo
Ultracold field-linked tetratomic molecules
Nature **626**, 287, pp. 283 (2024)
- 196** O. Bettermann, N. Darkwah Oppong, G. Pasqualetti, L. Riegger, I. Bloch, S. Fölling
Clock-line photoassociation of strongly bound dimers in a magic-wavelength lattice
Physical Review A **108**, L041302 (2023)
- 195** H. Schlömer, T. A. Hilker, I. Bloch, U. Schollwöck, F. Grusdt, A. Bohrdt
Quantifying hole-motion-induced frustration in doped antiferromagnets by Hamiltonian reconstruction
Communications Materials **4**, 64 (2023)
- 194** E. Wybo, A. Bastianello, M. Aidelsburger, I. Bloch, M. Knap
Preparing and Analyzing Solitons in the Sine-Gordon Model with Quantum Gas Microscopes. PRX Quantum **4**, 030308 (2023)
- 193** A. Impertro, J. F. Wienand, S. Haefele, H. von Raven, S. Hubele, T. M. Klostermann, C. R. Cabrera, I. Bloch, M. Aidelsburger
An unsupervised deep learning algorithm for single-site reconstruction in quantum gas microscopes
Communications Physics **6**, 166 (2023)
- 192** D. Wei, D. Adler, K. Srakaew, S. Agrawal, P. Weckesser, I. Bloch, J. Zeiher
Observation of Brane Parity Order in Programmable Optical Lattices
Physical Review X **13**, 021042 (2023)
- 191** I. Bloch
Editorial: Künstliche Quantenwelten im Labor
Phys. Unserer Zeit **5**, 54: 211-211 (2023)
- 190** M. Duda, X. Chen, R. Bause, A. Schindewolf, I. Bloch, X. Luo
Long-lived fermionic Feshbach molecules with tunable p -wave interactions
Physical Review A **107**, 053322 (2023)
- 189** J. Trautmann, D. Yankelev, V. Klüsener, A.J. Park, I. Bloch, S. Blatt
 $1S0-3P2$ magnetic quadrupole transition in neutral strontium
Physical Review Research **5**, 013219 (2023)
- 188** K. Srakaew, P. Weckesser, S. Hollerith, D. Wei, D. Adler, I. Bloch, J. Zeiher
A subwavelength atomic array switched by a single Rydberg atom
Nature Physics **19**, 714-719 (2023)
- 187** M. Duda, X. Chen, A. Schindewolf, R. Bause, J.v. Milczewski, R. Schmidt, I. Bloch, X. Luo

- Transition from a polaronic condensate to a degenerate Fermi gas of heteronuclear molecules*
Nature Physics **19**, 720–725 (2023)
- 186** X. Chen, A. Schindewolf, S. Eppelt, R. Bause, M. Duda, S. Biswas, T. Karman, T.A. Hilker, I. Bloch, X. Luo
Field-linked resonances of polar molecules
Nature **614**, 59 - 63 (2023)
- 185** S. Hirthe, T. Chalopin, D. Bourgund, P. Bojovic, A. Bohrdt, E. Demler, F. Grusdt, I. Bloch, T.A. Hilker
Magnetically mediated hole pairing in fermionic ladders of ultracold atoms
Nature **613**, 463 - 467 (2023)
- 184** R. Bause, A. Christianen, A. Schindewolf, I. Bloch, X. Luo
Ultracold Sticky Collisions: Theoretical and Experimental Status
The Journal of Physical Chemistry A **127**, 729-741 (2023)
- 183** T. Kohlert, S. Scherg, P. Sala, F. Pollmann, B.H. Madhusudhana, I. Bloch, M. Aidelsburger
Exploring the Regime of Fragmentation in Strongly Tilted Fermi-Hubbard Chains
Physical Review Letters **130**, 010201 (2023)
- 182** E. Deist, Y.-H.Lu, J. Ho, M. K Pasha, J. Zeiher, Z. Yan, D.M. Stamper-Kurn
Mid-Circuit Cavity Measurement in a Neutral Atom Array
Physical Review Letters **129** (20), 203602 (2022)
- 181** I. Bloch, M. Greiner
The superfluid-to-Mott insulator transition and the birth of experimental quantum simulation
Nature Reviews Physics **4**, 739–740 (2022)
- 180** S. Flannigan, N. Pearson, G. Low, A. Buyskikh, I. Bloch, P. Zoller, M. Troyer, A. Daley
Propagation of errors and quantitative quantum simulation with quantum advantage
Quantum Science and Technology **7** (4), 045025 (2022)
- 179** N. Darkwah Oppong, G. Pasqualetti, O. Bettermann, P. Zechmann, M. Knap, I. Bloch, S. Fölling
Probing transport and slow relaxation in the mass-imbalanced Fermi-Hubbard model.
Physical Review X **12**, 031026 (2022)
- 178** A. J. Daley, I. Bloch, C. Kokail, S. Flannigan, N. Pearson, M. Troyer, P. Zoller
Practical quantum advantage in quantum simulation
Nature **607**, 667–676 (2022)
- 177** A. J. Park, J. Trautmann, N. Šantić, V. Klüsener, A. Heinz, I. Bloch, S. Blatt
Cavity-Enhanced Optical Lattices for Scaling Neutral Atom Quantum Technologies to Higher Qubit Numbers
PRX Quantum **3**, 030314 (2022)
- 176** A. Schindewolf, R. Bause, X. Chen, M. Duda, T. Karman, I. Bloch, X. Luo
Evaporation of microwave-shielded polar molecules to quantum degeneracy
Nature **607**, 677–681 (2022)
- 175** D. Wei, A. Rubio Abadal, B. Ye, F. Machado, J. Kemp, K. Srakaew, S. Hollerith, J. Rui, S. Gopalakrishnan, N. Y. Yao, I. Bloch, J. Zeiher
Quantum gas microscopy of Kardar-Parisi-Zhang superdiffusion
Science **376** (6594), 716 - 720 (2022)

- 174** X. Chen, M. Duda, A. Schindewolf, R. Bause, I. Bloch, X. Luo
Suppression of Unitary Three-body Loss in a Degenerate Bose-Fermi Mixture
Physical Review Letters **128** (15), 153401 (2022)
- 173** T. Klostermann, C. R. Cabrera, H. von Raven, J. F. Wienand, C. Schweizer, I. Bloch, M. Aidelsburger
Fast long-distance transport of cold cesium atoms
Physical Review A **105** (4), 043319 (2022)
- 172** S. Hollerith, K. Srakaew, D. Wei, A. Rubio Abadal, D. Adler, P. Weckesser, A. Kruckenhauser, V. Walther, R. van Bijnen, J. Rui, C. Gross, I. Bloch, J. Zeiher
Realizing distance-selective interactions in a Rydberg-dressed atom array
Physical Review Letters **128** (11), 113602 (2022)
- 171** A. Bohrdt; L. Homeier, I. Bloch, E. A. Demler, F. Grusdt
Strong pairing in mixed-dimensional bilayer antiferromagnetic Mott insulators
Nature Physics **18**, 651 - 656 (2022)
- 170** P. Sompet, S. Hirthe, D. Bourgund, T. Chalopin, J. Bibo, J. Koepsell, P. Bojović, R. Verresen, F. Pollmann, G. Salomon, C. Gross, T. A. Hilker, I. Bloch
Realizing the symmetry-protected Haldane phase in Fermi-Hubbard ladders
Nature **606**, 484–488 (2022)
- 169** B. H. Madhusudhana, S. Scherg, T. Kohlert, I. Bloch, M. Aidelsburger
Benchmarking a Novel Efficient Numerical Method for Localized 1D Fermi-Hubbard Systems on a Quantum Simulator
PRX Quantum **2**, 040325 (2021)
- 168** R. Bause, A. Kamijo, X. Chen, M. Duda, A. Schindewolf, I. Bloch, X. Luo
Efficient conversion of closed-channel-dominated Feshbach molecules of $^{23}\text{Na}^{40}\text{K}$ to their absolute ground state
Physical Review A **104** (4), 043321 (2021)
- 167** J. M.S. Koepsell; D. Bourgund, P. Sompet, S. Hirthe, A. Bohrdt, Y. Wang, F. Grusdt, E. A. Demler, G. Salomon, C. Groß, et al.
Microscopic evolution of doped Mott insulators from polaronic metal to Fermi liquid
Science **374** (6563), pp. 82 - 86 (2021)
- 166** S. Scherg, T. Kohlert, P. Sala, F. Pollmann, B. H. Madhusudhana, I. Bloch, M. Aidelsburger
Observing non-ergodicity due to kinetic constraints in tilted Fermi-Hubbard chains
Nature Communications **12** (1), 4490 (2021)
- 165** R. Bause, A. Schindewolf, R. Tao, M. Duda, X. Chen, G. Quemener, T. Karman, A. Christianen, I. Bloch, X. Luo
Collisions of ultracold molecules in bright and dark optical dipole traps
Physical Review Research **3** (3), 033013 (2021)
- 164** S. Hollerith, A. Rubio-Abadal, K. Srakaew, D. Wei, J. Zeiher, C. Groß, I. Bloch
Microscopic electronic structure tomography of Rydberg macrodimers
Physical Review Research **3** (1), 013252 (2021)
- 163** A. Heinz, J. Trautmann, N. Santic, A. J. Park, I. Bloch, S. Blatt
Crossed optical cavities with large mode diameters
Optics Letters **46** (2), 250 - 253 (2021)
- 162** J. Rui, D. Wei, A. Rubio-Abadal, S. Hollerith, J. Zeiher, D.M. Stamper-Kurn, C. Gross, I. Bloch
A subradiant optical mirror formed by a single structured atomic layer

- Nature **583** (7816), 369 - 374 (2020)
- 161** A. Rubio-Abadal, N. Ippoliti, S. Hollerith, D. Wei, J. Rui, S.L. Sondhi, V. Khemani, C. Gross, I. Bloch
Floquet prethermalization in a Bose-Hubbard system
Physical Review X **10** (2), 021044 (2020)
- 160** J. Koepsell, S. Hirthe, D. Bourgund, P. Sompet, J. Vijayan, G. Salomon, C. Gross, I. Bloch
Robust Bilayer Charge-Pumping for Spin- and Density-Resolved Quantum Gas Microscopy
Physical Review Letters **125**, 010403 (2020)
- 159** K. Wintersperger, C. Braun, F. Nur Ünal, A. Eckardt, M. Di Liberti, N. Goldman, I. Bloch, M. Aidelsburger
Realization of an anomalous Floquet topological system with ultracold atoms
Nature Physics **16**, (2020)
- 158** R. Bause, M. Li, A. Schindewolf, X.-Y. Chen, M. Duda, S. Kotochigova, I. Bloch, X.-Y. Luo
Tune-out and magic wavelengths for ground-state $^{23}\text{Na}^{40}\text{K}$ molecules
Physical Review Letters **125**, 023201 (2020)
- 157** A. Heinz, A.J. Park, N. Santic, J. Trautmann, S.G. Porsev, M.S. Safronova, I. Bloch, S. Blatt
State-dependent optical lattices for the strontium optical qubit
Physical Review Letters **124**, 203201 (2020)
- 156** K. Wintersperger, M. Bukov, J. Näger, S. Lellouch, E. A. Demler, U. Schneider, I. Bloch, N. Goldman, M. Aidelsburger
Parametric Instabilities of Interacting Bosons in Periodically Driven 1D Optical Lattices
Physical Review X **10** (1), 011030 (2020)
- 155** J. Vijayan, P. Sompet, G. Salomon, J. Koepsell, S. Hirthe, A. Bohrdt, F. Grusdt, I. Bloch, C. Gross
Time-Resolved Observation of spin-charge deconfinement in fermionic Hubbard chains
Science **367**, 186-189 (2020)
- 154** J. Koepsell, J. Vijayan, P. Sompet, F. Grusdt, T. Hilker, E. Demler, G. Salomon, I. Bloch, C. Gross
Imaging magnetic polarons in the doped Fermi-Hubbard model
Nature **572**, 358-362 (2019)
- 153** D. A. Abanin, E. Altman, I. Bloch, M. Serbyn
Colloquium: Many-body localization, thermalization, and entanglement
Reviews of Modern Physics **91**, 021001 (2019)
- 152** C. Schweizer, F. Grusdt, M. Berngruber, L. Barbiero, E. Demler, Nathan Goldman, I. Bloch, M. Aidelsburger
Floquet approach to Z₂ lattice gauge theories with ultracold atoms in optical lattices
Nature Physics **15**, 1168-1173 (2019)
- 151** A. Rubio-Abadal, J.-Y. Choi, J. Zeiher, S. Hollerith, J. Rui, I. Bloch, C. Groß
Many-Body Delocalization in the Presence of a Quantum Bath
Physical Review X **9** (4), 041014 (2019)

- 150** S. Hollerith, J. Zeiher, J. Rui, A. Rubio-Abadal, V. Walther, T. Pohl, D. M. Stamper-Kurn, I. Bloch, C. Gross
Quantum gas microscopy of Rydberg macrodimers
Science **364**, 664-667, 2019
- 149** S. Snigirev, A.J. Park, A. Heinz, I. Bloch, S. Blatt
Fast and dense magneto-optical traps for strontium
Phys. Rev. A **99**, 063421 (2019)
- 148** N. Darkwah Oppong, L. Riegger, O. Bettermann, M. Höfer, J. Levinsen, M. M. Parish, I. Bloch, S. Fölling
Observation of coherent multi-orbital polarons in a two-dimensional Fermi gas
Physical Review Letters **122**, 193604 (2019)
- 147** G. Salomon, J. Koepsell, J. Vijayan, T. A. Hilker, J. Nespolo, L. Pollet, I. Bloch, C. Gross
Direct observation of incommensurate magnetism in Hubbard chains
Nature **565**, 56-60 (2019)
- 146** T. Kohlert, S. Scherg, X. Li, H. P. Lüschen, S. Das Sarma, I. Bloch, M. Aidelsburger
Observation of many-body localization in a one-dimensional system with single-particle mobility edge
Physical Review Letters **122**, 170403 (2019)
- 145** I. Bloch
Quantum Simulations Come of Age
Nature **14**, 1159-1161 (2018)
- 144** F. Seeßelberg, X.-Y. Luo, M. Li, R. Bause, S. Kotochigova, I. Bloch, C. Gohle
Extending rotational coherence of interacting polar molecules in a spin-decoupled magic trap
Physical Review Letters **121**, 253401 (2018)
- 143** S. Scherg, T. Kohlert, J. Herbrych, J. Stolpp, P. Bordia, U. Schneider, F. Heidrich-Meisner, I. Bloch, M. Aidelsburger
Non-Equilibrium Mass Transport in the 1D Fermi-Hubbard Model
Physical Review Letters **121**, 130402 (2018)
- 142** L. Riegger, N. Darkwah Oppong, M. Höfer, D. R. Fernandes, I. Bloch, S. Fölling
Localized Magnetic Moments with Tunable Spin Exchange in a Gas of Ultracold Fermions
Physical Review Letter **120**, 143601 (2018)
- 141** M. Lohse, Ch. Schweizer, H. M. Price, O. Zilberberg, I. Bloch
Exploring 4D Quantum Hall Physics with a 2D Topological Charge Pump
Nature **553**, 55 (2018)
- 140** H P. Lüschen, S. Scherg, T. Kohlert, M. Schreiber, P. Bordia, X. Li, S. D. Sarma, I. Bloch
Single-Particle Mobility Edge in a One-Dimensional Quasiperiodic Optical Lattice
Physical Review Letters **120**, 130402 (2018)
- 139** F. Seeßelberg, N. Buchheim, Z.K. Lu, T. Schneider, X.-Y. Luo, I. Bloch and C. Gohle
Modeling the adiabatic creation of ultracold, polar $^{23}\text{Na}^{40}\text{K}$ molecules
Physics Review A **97**, 013405 (2018)
- 138** J. Zeiher, Jae-yoon Choi, A. Rubio-Abadal, T. Pohl, R. van Bijnen, I. Bloch, Christian Gross

- Coherent many-body spin dynamics in a long-range interacting Ising chain*
Physical Review X **7**, 041063 (2017)
- 137** C. Gross, I. Bloch
Quantum simulations with ultracold atoms in optical lattices
Science **357**, 995 (2017)
- 136** L. Riegger, N. Darkwah Oppong, M. Höfer, D. R. Fernandes, I. Bloch, S. Fölling
Localized magnetic moments with tunable spin exchange in a gas of ultracold fermions
Physical Review Letters **120** (14), 143601 (2018)
- 135** T. Hilker, G. Salomon, F. Grusdt, A. Omran, M. Boll, E. Demler, I. Bloch, C. Gross
Revealing hidden antiferromagnetic correlations in doped Hubbard chains via string correlators
Science **357**, 484 (2017)
- 134** M. Reitter, J. Näger, K. Wintersperger, Ch. Sträter, I. Bloch, A. Eckardt, U. Schneider
Interaction dependent heating and atom loss in a periodically driven optical lattice
Physical Review Letters **119**, 200402 (2017)
- 133** P. Bordia, H. Lüschen, S. Scherg, S. Gopalakrishnan, M. Knap, U. Schneider, I. Bloch
Probing Slow Relaxation and Many-Body Localization in Two-Dimensional Quasi-Periodic Systems
Physical Review X **7**, 041047
- 132** H. P. Lüschen, P. Bordia, S. Scherg, F. Alet, E. Altman, U. Schneider, I. Bloch
Observation of Slow Dynamics near the Many-Body Localization Transition in One-Dimensional Quasiperiodic Systems
Physical Review Letters **119**, 260401 (2017)
- 131** H. P. Lüschen, P. Bordia, S. S. Hodgman, M. Schreiber, S. Sarkar, A. J. Daley, M. H. Fischer, E. Altman, I. Bloch, U. Schneider
Signatures of Many-Body Localization in a Controlled Open Quantum System
Physical Review X **7**, 011034 (2017)
- 130** P. Bordia, H. Lüschen, U. Schneider, M. Knap, I. Bloch
Periodically Driving a Many-Body Localized Quantum System
Nature Physics **13**, 460–464 (2017)
- 129** C. Schweizer, M. Lohse, R. Citro, and I. Bloch
Spin Pumping and Measurement of Spin Currents in Optical Superlattices
Physical Review Letters **117**, 170405 (2016)
- 128** M. Boll, T. Hilker, G. Salomon, A. Omran, J. Nespolo, L. Pollet, I. Bloch, C. Gross
Spin- and Density-Resolved Microscopy of Antiferromagnetic Correlations in Fermi-Hubbard Chains
Science **353**, 6305 (2016)
- 127** J. Zeiher, R. van Bijnen, P. Schauß, S. Hild, J.-y. Choi, T. Pohl, I. Bloch, C. Gross
Many-body interferometry of a Rydberg-dressed spin lattice
Nature Physics **12**, 1095–109 (2016)
- 126** J.-y. Choi, S. Hild, J. Zeiher, P. Schauß, A. Rubio-Abadal, T. Yefsah, V. Khemani, D. A. Huse, I. Bloch, C. Gross
Exploring the many-body localization transition in two dimensions

- Science **352**, 1547 (2016)
- 125** C. Hofrichter, L. Riegger, F. Scazza, M. Höfer, D. R. Fernandes, I. Bloch, S. Fölling
Direct probing of the Mott crossover in the $SU(N)$ Fermi-Hubbard model
Physical Review X **6**, 021030 (2016)
- 124** L. Vidmar, J. P. Ronzheimer, M. Schreiber, S. Braun, S. S. Hodgman, S. Langer, F. Heidrich-Meisner, I. Bloch, U. Schneider
Dynamical Quasicondensation of Hard-Core Bosons at Finite Momenta
Physical Review Letters **115**, 175301 (2015)
- 123** A. Omran, M. Boll, T. Hilker, K. Kleinlein, G. Salomon, I. Bloch, C. Gross
Microscopic Observation of Pauli Blocking in Degenerate Fermionic Lattice Gases
Physical Review Letters **115**, 263001 (2015)
- 122** M. Höfer, L. Riegger, F. Scazza, C. Hofrichter, D.R. Fernandes, M. M. Parish, J. Levinsen, I. Bloch, S. Fölling
Observation of an orbital interaction-induced Feshbach resonance in 173-Yb
Physical Review Letters **115**, 265302 (2015)
- 121** T. Li, L. Duca, M. Reitter, F. Grusdt, E. Demler, M. Endres, M. Schleier-Smith, I. Bloch, U. Schneider
Bloch state tomography using Wilson lines
Science **352**, 1094 (2016)
- 120** P. Bordia, H. P. Lüschen, S. S. Hodgman, M. Schreiber, I. Bloch, U. Schneider
Coupling Identical 1D Many-Body Localized Systems
Physical Review Letters **116**, 140401 (2016)
- 119** J. Zeiher, P. Schauß, S. Hild, T. Macrì, I. Bloch, Ch. Gross
Microscopic Characterization of Scalable Coherent Rydberg Superatoms
Physical Review X **5**, 031015 (2015)
- 118** M. Schreiber, S. S. Hodgman, P. Bordia, H. P. Lüschen, M. H. Fischer, R. Vosk, E. Altman, U. Schneider, I. Bloch
Observation of many-body localization of interacting fermions in a quasi-random optical lattice
Science **349**, 842 (2015)
- 117** M. Lohse, Ch. Schweizer, O. Zilberberg, M. Aidelsburger, I. Bloch
A Thouless Quantum Pump with Ultracold Bosonic Atoms in an Optical Superlattice
Nature Physics **12**, 350–354 (2016)
- 116** T. Fukuhara, S. Hild, J. Zeiher, P. Schauß, I. Bloch, M. Endres, Ch. Gross
Spatially Resolved Detection of a Spin-Entanglement Wave in a Bose-Hubbard Chain
Physical Review Letters **115**, 035302 (2015)
- 115** L. Vidmar, J. P. Ronzheimer, M. Schreiber, S. Braun, S. S. Hodgman, S. Langer, F. Heidrich-Meisner, I. Bloch, U. Schneider
Dynamical Quasicondensation of Hard-Core Bosons at Finite Momenta
Physical Review Letters **115**, 175301 (2015)
- 114** P. Schauß, J. Zeiher, T. Fukuhara, S. Hild, M. Cheneau, T. Macrì, T. Pohl, I. Bloch, Ch. Gross
Crystallization in Ising quantum magnets
Science **347**, 1455 (2015)

- 113** S. Braun, M. Friesdorf, S. S. Hodgman, M. Schreiber, J. P. Ronzheimer, A. Riera, M. del Rey, I. Bloch, J. Eisert, U. Schneider
Emergence of coherence and the dynamics of quantum phase transitions
PNAS **112**, 3461 (2015)
- 112** M. Aidelsburger, M. Lohse, C. Schweizer, M. Atala, J.T. Barreiro, S. Nascimbène, N.R. Cooper, I. Bloch, N. Goldman
Measuring the Chern number of Hofstadter bands with ultracold bosonic atoms
Nature Physics **11**, 162–166 (2015)
- 111** L. Duca, T. Li, M. Reitter, I. Bloch, M. Schleier-Smith, U. Schneider
An Aharonov-Bohm interferometer for determining Bloch band topology
Science **347**, 288-292 (2015)
- 110** S. Hild, T. Fukuhara, P. Schauss, J. Zeiher, M. Knap, E. Demler, I. Bloch, C. Gross
Far-from-equilibrium spin transport in Heisenberg quantum magnets
Physical Review Letters **113**, 147205 (2014)
- 109** U. Schneider, S. Mandt, A. Rapp, S. Braun, H. Weimer, I. Bloch, A. Rosch
Comment on “Consistent thermostatics forbids negative absolute temperatures”
arXiv:1407.4127
- 108** S. Braun, M. Friesdorf, S. Hodgman, M. Schreiber, J.P. Ronzheimer, A. Riera, M del Rey, I. Bloch, J. Eisert, U. Schneider
Emergence of coherence and the dynamics of quantum phase transitions
PNAS **112**, 3641 (2015)
- 107** F. Scazza, C. Hofrichter, M. Höfer, P. C. De Groot, I. Bloch, S. Fölling
Observation of two-orbital spin-exchange interactions with ultracold $SU(N)$ -symmetric fermions
Nature Physics **10**, 779 (2014)
- 106** M. Atala, M. Aidelsburger, M. Lohse, J. T. Barreiro, B. Paredes, I. Bloch,
Observation of Chiral Currents with Ultracold Atoms in Bosonic Ladders
Nature Physics **10**, 588 (2014)
- 105** M. Knap, A. Kantian, Th. Giamarchi, I. Bloch, M. Lukin, E. Demler
Probing Real-Space and Time-Resolved Correlation Functions with Many-Body Ramsey Interferometry
Physical Review Letters **111**, 147205 (2013)
- 104** M. Aidelsburger, M. Atala, M. Lohse, J.T. Barreiro, B. Paredes, I. Bloch
Realization of the Hofstadter Hamiltonian with ultracold atoms in optical lattices
Physical Review Letters **111**, 185301 (2013)
- 103** T. Fukuhara, P. Schauß, M. Endres, S. Hild, M. Cheneau, I. Bloch, C. Gross
Microscopic observation of magnon bound states and their dynamics
Nature **502**, 76 (2013)
- 102** M. Aidelsburger, M. Atala, S. Nascimbène, S. Trotzky, Y.-A. Chen, I. Bloch
Experimental realization of strong effective magnetic fields in optical superlattice potentials
Appl. Phys. **B 113**, 1 (2013)
- 101** M. Endres, M. Cheneau, T. Fukuhara, C. Weitenberg, P. Schauß, C. Gross, L. Mazza, M. Carmen Banuls, L. Pollet, I. Bloch, S. Kuhr
Single-site- and single-atom-resolved measurement of correlation functions
Appl. Phys. **B 113**, 1 (2013)
- 100** J.P. Ronzheimer, M. Schreiber, S. Braun, S. Hodgman, S. Langer, I.P. McCulloch, F. Heidrich-Meisner, I. Bloch, U. Schneider

- Expansion dynamics of interacting bosons in homogeneous lattices in one and two dimensions*
Physical Review Letters **110**, 205301 (2013)
- 99** M. Atala, M. Aidelsburger, J.T. Barreiro, D. Abanin, T. Kitagawa, E. Demler, I. Bloch
Direct Measurement of the Zak Phase in Topological Bloch Bands
Nature Physics **9**, 795 (2013)
- 98** D. Abanin, T. Kitagawa, I. Bloch, E. Demler
Interferometric approach to measuring band topology in 2D optical lattices
Physical Review Letters **110**, 165304 (2013)
- 97** T. Fukuhara, A. Kantian, M. Endres, M. Cheneau, P. Schauß, S. Hild, D. Bellem, U. Schollwöck, Th. Giamarchi, Ch. Gross, I. Bloch, S. Kuhr
Quantum dynamics of a single, mobile spin impurity
Nature Physics **9**, 235 (2013)
- 96** S. Braun, J. P. Ronzheimer, M. Schreiber, S. S. Hodgman, T. Rom, I. Bloch, U. Schneider
Negative Absolute Temperature for Motional Degrees of Freedom
Science **339**, 52 (2013)
- 95** P. Schauß, M. Cheneau, M. Endres, T. Fukuhara, S. Hild, A. Omran, Th. Pohl, Ch. Gross, S. Kuhr, I. Bloch
Observation of spatially ordered structures in a two-dimensional Rydberg gas
Nature **491**, 87 (2012)
- 94** M. Endres, T. Fukuhara, D. Pekker, M. Cheneau, P. Schauss, Ch. Gross, E. Demler, S. Kuhr, I. Bloch
The 'Higgs' amplitude mode at the two-dimensional superfluid-Mott insulator transition
Nature **487**, 454 (2012)
- 93** S. Nascimbène, Y.-A. Chen, M. Atala, M. Aidelsburger, S. Trotzky, B. Paredes, I. Bloch
Experimental realization of plaquette resonating valence-bond states with ultracold atoms in optical lattices
Physical Review Letters **108**, 205301 (2012)
- 92** I. Bloch, J. Dalibard, S. Nascimbène
Quantum simulations with ultracold atoms
Nature Physics **8**, 267 (2012)
- 91** S. Trotzky, Y.-A. Chen, A. Flesch, I. McCulloch, U. Schollwöck, J. Eisert, I. Bloch
Probing the relaxation towards equilibrium in an isolated strongly correlated 1D Bose gas
Nature Physics **8**, 325 (2012)
- 90** U. Schneider, L. Hackermüller, J.-P. Ronzheimer, S. Will, S. Braun, Th. Best, I. Bloch, E. Demler, S. Mandt, D. Rasch, A. Rosch
Fermionic transport and out-of-equilibrium dynamics in a homogeneous Hubbard model with Ultracold atoms
Nature Physics **8**, 213 (2012)
- 89** M. Cheneau, P. Barmettler, D. Poletti, M. Endres, P. Schauss, T. Fukuhara, C. Gross, I. Bloch, C. Kollath, S. Kuhr
Light-Cone-Like Spreading of Correlations in a Quantum Many-Body System
Nature **481**, 484 (2012)

- 88** M. Aidelsburger, M. Atala, S. Nascimbène, S. Trotzky, Y.-A. Chen, I. Bloch
Experimental Realization of Strong Effective Magnetic Fields in an Optical Lattice
Physical Review Letters **107**, 255301 (2012)
- 87** M. Endres, M. Cheneau, T. Fukuhara, Ch. Weitenberg, P. Schauss, L. Mazza, M.-C. Banuls, L. Pollet, I. Bloch & S. Kuhr
Direct Observation of Quantum Correlated Particle Hole Pairs and Non-Local String Order in Low Dimensional Mott Insulators
Science **334**, 200 (2011)
- 86** Y.-A. Chen, S. Nascimbene, M. Aidelsburger, M. Atala, S. Trotzky & I. Bloch
Controlling Correlated Tunneling and Superexchange Interactions with AC-Driven Optical Lattices
Physical Review Letters **107**, 210405 (2011)
- 85** C. Kasztelan, S. Trotzky, Y.-A. Chen, I. Bloch, I.P. McCulloch, U. Schollwöck, G. Orso
Landau-Zener sweeps and sudden quenches in coupled Bose-Hubbard chains
Physical Review Letters **106**, 155302 (2011)
- 84** M. Snoek, I. Titvinidze, I. Bloch & W. Hofstetter
Effect of Interactions on Harmonically Confined Bose-Fermi Mixtures in Optical Lattices
Physical Review Letters **106**, 155301 (2011)
- 83** Ch. Weitenberg, P. Schauß, T. Fukuharam, M. Cheneau, M. Endres, I. Bloch, S. Kuhr
Coherent light scattering from a two-dimensional Mott insulator
Physical Review Letters **106**, 215301 (2011)
- 82** Ch. Weitenberg, M. Endres, J.F. Sherson, M. Cheneau, P. Schauss, T. Fukuhara, I. Bloch, S. Kuhr
Single-Spin Addressing in an Atomic Mott Insulator
Nature **471**, 319 (2011)
- 81** S. Will, Th. Best, S. Braun, U. Schneider, I. Bloch
Coherent Interaction of a Single Fermion with a Small Bosonic Field
Physical Review Letters **106**, 115305 (2011)
- 80** I. Bloch
Ultracold Bosonic Atoms in Optical Lattices in Understanding Quantum Phase Transitions
ed. by L. Carr, CRC Press (2010)
- 79** S. Trotzky, Y.-A. Chen, U. Schnorrberger, P. Cheinet & Immanuel Bloch
Controlling and Detecting Spin Correlations of Ultracold Atoms in Optical lattices
Physical Review Letters **105**, 265303 (2010)
- 78** I. Bloch
Paired in one dimension
Nature **467**, 535-536 (2010)
- 77** Y. Chen, S. Huber, S. Trotzky, I. Bloch & E. Altman
Many-body Landau-Zener dynamics in coupled 1D Bose liquids
Nature Physics **7**, 61-67 (2011)
- 76** J. Sherson, C. Weitenberg, M. Endres, M. Cheneau, I. Bloch, S. Kuhr
Single-atom resolved fluorescence Imaging of an Atomic Mott Insulator
Nature **467**, 68-72 (2010)

- 75 S. Will, T. Best, U. Schneider, L. Hackermüller, D. Lühmann, I. Bloch
Time-resolved observation of coherent multi-body interactions in quantum phase revivals
Nature **465**, 197-201 (2010)
- 74 I. Bloch, A. Rosch
Exploring strongly correlated quantum many-body systems with ultracold atoms in optical lattices
Physica Status Solidi B **247**, No 3, 530-536 (2010)
- 73 L. Hackermüller, U. Schneider, M. Moreno, S. Will, T. Best, T. Kitagawa, E. Demler, I. Bloch, B. Paredes
Anomalous Expansion of Attractively Interacting Fermionic Atoms in Optical Lattices
Science **327**, 1621 (2010)
- 72 I. Bloch
Strongly Correlated Quantum Phases of Ultracold Atoms in Optical Lattices
Proc. Int. School of Physics “Enrico Fermi” Course CLXXIII. eds. R. Kaiser, D. S. Wiersma and L. Fallani (2009)
- 71 U. Schnorrberger, J. D. Thompson, S. Trotzky, R. Pugatch, N. Davidson, S. Kuhr, I. Bloch
Electromagnetic induced transparency and light storage in a Mott insulator
Physical Review Letters **103**, 033003 (2009)
- 70 S. Trotzky, L. Pollet, F. Gerbier, U. Schnorrberger, I. Bloch, N. V. Prokov’ev, B. Svistunov, M. Troyer
Suppression of the critical temperature for superfluidity near the Mott transition: validating a quantum simulator
Nature Physics **6**, 998 (2010)
- 69 Th. Best, S. Will, U. Schneider, L. Hackermüller, D. van Oosten, I. Bloch
Role of interactions in ^{87}Rb - ^{40}K Bose-Fermi mixtures in a 3d optical lattice
Physical Review Letters **102**, 030408 (2009)
- 68 U. Schneider, L. Hackermüller, S. Will, Th. Best, I. Bloch, T.A. Costi, R.W. Helmes, D. Rasch, A. Rosch
Metallic and Insulating Phases of Repulsively Interacting Fermions in a 3D Optical Lattice
Science **322**, 1520-1525 (2008)
- 67 I. Bloch
Quantum coherence and entanglement with ultracold atoms in optical lattices
Nature **453**, 1016-1022 (2008)
- 66 P. Cheinet, S. Trotzky, M. Feld, S. Fölling, U. Schnorrberger, M. Moreno, B. Paredes, I. Bloch
Counting Atoms using Interaction Blockade with Ultracold Atoms in Optical Superlattices
Physical Review Letters **101**, 090404 (2008)
- 65 P. Barmettler, A.-M. Rey, I. Bloch, E. Demler, M.D. Lukin, V. Gritsev
Controllable dynamical generation of entanglement and frustrated spin states in ultracold bosonic double well superlattices
Physical Review A **78**, 012330 (2008)
- 64 I. Bloch, J. Dalibard and W. Zwerger
Many-Body Physics with Ultracold Gases
Rev. Mod. Phys. **80**, 885 (2008)

- 63** I. Bloch
Quantum Gases
Science **319**, 1202 (2008)
- 62** A. Koetsier, R. A. Duine, I. Bloch and H. Stoof
Achieving the Néel state in an optical lattice
Physical Review A **77**, 023623 (2008)
- 61** B. Paredes, I. Bloch
Minimum Instances of Topological Matter in an Optical Plaquette
Physical Review A **77**, 023603 (2008)
- 60** S. Trotzky, P. Cheinet, S. Fölling, M. Feld, U. Schnorrberger, A.M. Rey, A. Polkovnikov, E. Demler, M. Lukin, I. Bloch
Direct observation and control of superexchange interactions with ultracold atoms in optical lattices
Science **319**, 295 (2008)
- 59** A. Widera, S. Trotzky, P. Cheinet, S. Fölling, F. Gerbier, V. Gritsev, E. Demler, I. Bloch
Quantum spin dynamics of squeezed Luttinger liquids in two-component atomic gases
Physical Review Letters **100**, 140401 (2008)
- 58** S. Fölling, S. Trotzky, P. Cheinet, M. Feld, R. Saers, T. Müller, A. Widera, I. Bloch
Direct observation of second order atom tunnelling
Nature **448**, 1029-1032 (2007)
- 57** I. Bloch
Strongly Correlated Quantum Phases of Ultracold Atoms in Optical Lattices
Proceedings of the International School of Physics "Enrico Fermi",
Course CLXIV, Varenna, 20 - 30 June 2006, edited by M. Inguscio, W. Ketterle, C. Salomon
IOS Press, Amsterdam 2008
- 56** T. Müller, S. Fölling, A. Widera, I. Bloch
State preparation and dynamics of ultracold atoms in higher lattice orbitals
Physical Review Letters **99**, 200405 (2007)
- 55** A. M. Rey, V. Gritsev, I. Bloch, E. Demler, M. Lukin
Preparation and detection of magnetic quantum phases in optical superlattices
Physical Review Letters **99**, 140601 (2007)
- 54** F. Gerbier, S. Fölling, A. Widera, I. Bloch
Visibility of a Bose-condensed gas released from an optical lattice at finite temperature
arXiv:0701.420
- 53** Ch. Gross, Th. Best, D. van Oosten, I. Bloch
Coherent and incoherent spectral broadening in a photonic crystal fiber
Opt. Lett. **32**, 1767-1769 (2007)
- 52** T. Gericke, F. Gerbier, A. Widera, S. Fölling, O. Mandel; I. Bloch
Adiabatic loading of a Bose-Einstein condensate in a 3D optical lattice
J. Mod. Phys. **54**, 735 (2007)
- 51** T. Rom, Th. Best, D. van Oosten, U. Schneider, S. Fölling, B. Paredes, I. Bloch
Free fermion antibunching in a degenerate Fermi gas released from an optical lattice
Nature **444**, 733-736 (2006)

- 50 I. Bloch, S. Fölling, A. Widera, T. Müller, T. Rom, Th. Best, D. van Oosten, U. Schneider, B. Paredes, F. Gerbier
Strongly correlated quantum matter in optical lattices
XX International Conference on Atomic Physics - ICAP 2006. AIP Conference Proceedings, **869**, 191-200 (2006)
- 49 P. Treutlein, T. Steinmetz, Y. Colombe, B. Lev, P. Hommelhoff, J. Reichel, M. Greiner, O. Mandel, A. Widera, T. Rom, I. Bloch, T. W. Hänsch
Quantum information processing in optical lattices and magnetic microtraps
Fortschr. Phys. **54**, 702-718 (2006)
- 48 S. Fölling, A. Widera, T. Müller, F. Gerbier, I. Bloch
Formation of spatial shell structures in the superfluid to Mott insulator transition
Physical Review Letters **97**, 060403 (2006)
- 47 A. Widera, F. Gerbier, S. Fölling, T. Gericke, O. Mandel, I. Bloch
Precision measurement of spin-dependent interaction strengths for spin-1 and spin-2 ^{87}Rb atoms
New J. Phys. **8**, 152 (2006)
- 46 I. Bloch
Engineering multi-particle entanglement with neutral atoms in optical lattices
Proc. Int. School of Physics “Enrico Fermi”, eds. G. Casati, D.L. Shepelyansky and P. Zoller, IOS Press, p. 521-548 (2006)
- 45 F. Gerbier, A. Widera, S. Fölling, O. Mandel, I. Bloch
Resonant control of spin dynamics in ultracold quantum gases by microwave dressing
Physical Review A **73**, 041602R (2006)
- 44 F. Gerbier, S. Fölling, A. Widera, O. Mandel, I. Bloch
Probing the number statistics of ultracold atoms across the superfluid-Mott insulator transition
Physical Review Letters **96**, 090401 (2006)
- 43 I. Bloch, M. Greiner,
Exploring Quantum Matter with Ultracold Atoms in Optical Lattices
Adv. At. Mol. Phys **52**, 1-47 (2005)
- 42 F. Gerbier, A. Widera, S. Fölling, O. Mandel, T. Gericke I. Bloch
Interference pattern and visibility of a Mott insulator
Physical Review A **72**, 053606, (2005)
- 41 I. Bloch
Ultracold Quantum Gases in Optical Lattices
Nature Physics **1**, 23-30 (2005)
- 40 A. Widera, F. Gerbier, S. Fölling, O. Mandel, T. Gericke, I. Bloch
Coherent collisional spin dynamics in optical lattices
Physical Review Letters **95**, 190405 (2005)
- 39 F. Gerbier, A. Widera, S. Fölling, O. Mandel, T. Gericke, I. Bloch
Phase coherence of an atomic Mott insulator
Physical Review Letters **95**, 050404 (2005)
- 38 S. Fölling, S., F. Gerbier, A. Widera, O. Mandel, T. Gericke, I. Bloch
Spatial quantum noise interferometry in expanding ultracold atom clouds
Nature **434**, 481 (2005)
- 37 I. Bloch
Exploring Quantum Matter with Ultracold Atoms in Optical Lattices
J. Phys. B, **B38**, S629-S643, 2005 selected as J. Phys. B's 2005 Highlight,

- see <http://herald.iop.org/jphysb-highlights2005/m51/crk/162052/link/211>
- 36** I. Bloch
Engineering Multi particle entanglement with neutral atoms in optical lattice
Atomic Physics 19: XIX International Conference on Atomic Physics (ICAP 2004), AIP Conf. Proc. **770**, 323-332 (2005), DOI:10.1063/1.1928866
- 35** I. Bloch
Experimentieren mit den kältesten Objekten des Universums
Forschungsmagazin der Johannes Gutenberg-Universität, 42-45, 2004
- 34** T. Rom, T. Best, O. Mandel, A. Widera, M. Greiner, T.W. Hänsch, I. Bloch
State selective production of molecules in optical lattices
Physical Review Letters **93**, 073002 (2004)
- 33** B. Paredes, A. Widera, V. Murg, O. Mandel, S. Fölling, I. Cirac, G.V. Shlyapnikov, T.W. Hänsch, I. Bloch
Tonks-Girardeau gas of ultracold atoms in optical lattices
Nature **429**, 277-281 (2004)
- 32** I. Bloch
Quantum gases in optical lattices
Phys. World **17**, 25-29 (2004)
- 31** A. Widera, O. Mandel, M. Greiner, S. Kreim, T.W. Hänsch, I. Bloch
Entanglement interferometry for precision measurement of atomic scattering properties
Physical Review Letters **92**, 160406, (2004)
- 30** M. Greiner, O. Mandel, T. Rom, A. Altmeyer, A. Widera, T.W. Hänsch, I. Bloch
Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms
Physica B **11-12**, 329-333 (2003)
- 29** O. Mandel, M. Greiner, A. Widera, T. Rom, T.W. Hänsch, I. Bloch
Controlled collisions for multi-particle entanglement of optically trapped atoms
Nature **425**, 937 (2003)
- 28** O. Mandel, M. Greiner, A. Widera, T. Rom, T.W. Hänsch, I. Bloch
Coherent transport of neutral atoms in spin-dependent optical lattice potentials
Physical Review Letters **91**, 010407 (2003)
- 27** I. Bloch, M. Greiner, O. Mandel, and T.W. Hänsch,
Coherent cold collisions with neutral atoms in optical lattices
Phil. Trans. R. Soc. Lond. A **361**, 1409 (2003)
- 26** M. Greiner, O. Mandel, A. Altmeyer, A. Widera, T. Rom, T.W. Hänsch, I. Bloch
Beyond Mean Field Physics with Bose-Einstein Condensates in Optical Lattices
Proceedings of the XVIII International Conference on Atomic Physics, 171-180, World Scientific
- 25** M. Greiner, O. Mandel, T.W. Hänsch, I. Bloch,
Collapse and Revival of the Macroscopic Wave Function of a Bose-Einstein Condensate
Nature **419**, 51 (2002)
- 24** M. Greiner, T.W. Hänsch, I. Bloch,
Mott-Isolator-Zustand - Perfekte Ordnung am Nullpunkt
Physik in unserer Zeit **33**, 51 (2002)
- 23** M. Greiner, O. Mandel, T. Esslinger, T.W. Hänsch, I. Bloch
Quantum phase transition from a superfluid to a Mott insulator in a gas of ultracold atoms

- Nature **415**, 39 (2002)
- 22 M. Greiner, I. Bloch, O. Mandel, T.W. Hänsch, T. Esslinger
Bose-Einstein condensates in 1D-and 2D optical lattices
Applied Physics B **73**, 769 (2001)
- 21 M. Greiner, I. Bloch, O. Mandel, T.W. Hänsch, T. Esslinger
Exploring phase coherence in a 2D lattice of Bose-Einstein condensates
Physical Review Letters **87**, 160405 (2001)
- 20 M. Greiner, I. Bloch, T.W. Hänsch, T. Esslinger
Magnetic transport of trapped cold atoms over a large distance
Physical Review A **63**, 031401 (2001)
- 19 I. Bloch
Atomlaser und Phasenkohärenz atomarer Bose-Einstein-Kondensate
MPQ Report **264** (2001)
- 18 I. Bloch, M. Kohl, M. Greiner, T.W. Hänsch, T. Esslinger
Optics with an atom laser beam
Physical Review Letters **87**, 030401 (2001)
- 17 I. Bloch, M. Greiner, O. Mandel, T.W. Hänsch, T. Esslinger
Sympathetic cooling of ^{85}Rb and ^{87}Rb
Physical Review A **64**, 021402 (2001)
- 16 I. Bloch, T.W. Hänsch, T. Esslinger
Atom lasers and phase coherence of atomic Bose gases
Riken Review **33**, 6 (2001)
- 15 T. Esslinger, I. Bloch, T.W. Hänsch
Atomlaser
Physikalische Blätter **56**, 47 (2000)
- 14 T. Esslinger, I. Bloch, T.W. Hänsch
Probing first-order spatial coherence of a Bose-Einstein condensate
Journal of Modern Optics, **47**, 2725 (2000)
- 13 I. Bloch, T.W. Hänsch, T. Esslinger
Wenn Materie Quantenwellen schlägt
Spektrum der Wissenschaft **7** (2000)
- 12 I. Bloch
Atomlaser und Phasenkohärenz atomarer Bose-Einstein-Kondensate
PhD thesis, Ludwig-Maximilians-Universität Munich (2000)
- 11 I. Bloch, T.W. Hänsch, T. Esslinger,
Measurement of the spatial coherence of a trapped Bose gas at the phase transition
Nature **403**, 166 (2000)
- 10 T. Esslinger, I. Bloch, M. Greiner, T.W. Hänsch
Generating and Manipulating Atom Laser Beams
in *Proceedings of the International School of Quantum Electronics, 27th course*
(1999)
- 9 T. Esslinger, I. Bloch, T.W. Hänsch
From novel magnetic traps to atom lasers
in *14th International Conference ICOLS99 on Laser Spectroscopy* (1999)
Innsbruck, Austria: World Scientific, Singapore.
- 8 I. Bloch, T.W. Hänsch, T. Esslinger
Materiewellen im Gleichschritt
Physik in unserer Zeit **30**, 131 (1999)

- 7 I. Bloch, T.W. Hänsch, T. Esslinger
Atom laser with a cw output coupler
Physical Review Letters **82**, 3008 (1999)
- 6 T. Esslinger, I. Bloch, T.W. Hänsch
The QUIC-trap: A Simple Magnetic Trap for Bose-Einstein Condensation
in *Proceedings of the International School of Physics "Enrico Fermi" on Bose-Einstein Condensation*
1998. Varenna, Italy
- 5 T. Esslinger, I. Bloch, T.W. Hänsch
Bose-Einstein condensation in a quadrupole-Ioffe-configuration trap
Physical Review A **58**, R2664 (1998)
- 4 D. Meschede, I. Bloch, A. Goepfert, D. Haubrich, M. Kreis, F. Lison, R. Schutze, R. Wynands
Atom optics with permanent magnetic components
Atom Optics, Proceedings of the SPIE. 1997. San Jose, USA
- 3 A. Goepfert, I. Bloch, D. Haubrich, F. Lison, R. Schutze, R. Wynands, D. Meschede
Stimulated focusing and deflection of an atomic beam using picosecond laser pulses
Physical Review A **56**, R3354 (1997)
- 2 I. Bloch
Stimulierte Lichtkräfte mit Pikosekunden-Laserpulsen
Diploma thesis, *Institut für Angewandte Physik*. Rheinische-Friedrich-Wilhelms University of Bonn (1997)
- 1 I. Bloch, A. Goepfert, D. Haubrich, F. Lison, R. Schutze, R. Wynands, D. Meschede
Stimulated light forces using picosecond laser pulses
Atom Optics, Proceedings of the SPIE. 1997. San Jose, USA