

Summary

- >190 publications, thereof
41 Nature/Science, 85 Physical Review Letters/Nature Physics/Physical Review X
- **Citation Metrics:**
Google Scholar citations: (total) > 70.000, h-index: 109
Publons (formerly ISI WoS): (total) > 43.200, h-index: 90

List of Publications

- 190** I. Bloch
Editorial: Künstliche Quantenwelten im Labor
Phys. Unserer Zeit **5**, 54: 211-211 (2023)
- 189** H. Schlömer, T. A. Hilker, I. Bloch, U. Schollwöck, F. Grusdt, A. Bohrdt
Quantifying hole-motion-induced frustration in doped antiferromagnets by Hamiltonian reconstruction
- 188** Communications Materials **4**, 64 (2023)
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)
- 187** 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)
- 186** 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
- 185** Nature Physics **19**, 720–725 (2023)
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
- 184** Nature **614**, 59 - 63 (2023)
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
- 183** Nature **613**, 463 - 467 (2023)
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)
- 182** 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
- 181** Physical Review Letters **130**, 010201 (2023)
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)
- 180** I. Bloch, M. Greiner
The superfluid-to-Mott insulator transition and the birth of experimental quantum simulation
Nature Reviews Physics **4**, 739–740 (2022)
- 179** 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)

- 178** 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)
- 177** 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)
- 176** 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)
- 175** 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)
- 174** 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)
- 173** 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)
- 172** 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)
- 171** 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)
- 170** 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)
- 169** 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)
- 168** 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)
- 167** 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)
- 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. Sompets, 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}Na ^{40}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. Nägerl, 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. Sompets, 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. Rieger, 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. Rieger, 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. Rieger, 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. Rieger, 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. Rieger, 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 thermostatistics 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
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