

Christian Groß – List of publications

Metrics

- Publons profile: <https://publons.com/researcher/2454240/christian-gross/>
- Web of Science ResearcherID: P-5475-2014
- ORCID: 0000-0003-2292-5234
- Metrics (Web of Science): Total citation number: 4879, Average citation number per paper: 109, h-index: 29

List of publications

1. Rubio-Abadal, A., Ippoliti, M., Hollerith, S., Wei, D., Rui, J., Sondhi, S. L., Khemani, V., Gross, C. & Bloch, I. Floquet Prethermalization in a Bose-Hubbard System. *arXiv:2001.08226* (2020).
2. Rui, J., Wei, D., Rubio-Abadal, A., Hollerith, S., Zeiher, J., Stamper-Kurn, D. M., Gross, C. & Bloch, I. A Subradiant Optical Mirror Formed by a Single Structured Atomic Layer. *arXiv:2001.00795* (2020).
3. Vijayan, J., Sompet, P., Salomon, G., Koepsell, J., Hirthe, S., Bohrdt, A., Grusdt, F., Bloch, I. & Gross, C. Time-Resolved Observation of Spin-Charge Deconfinement in Fermionic Hubbard Chains. *Science* **367**, 186–189. (2020) (2020).
4. Gross, C. Qubit Readout Boost. *Nature Physics* **15**, 523–524 (2019).
5. Hofferberth, S. & Gross, C. Hoch Angeregt Und Kontrolliert. *Physik Journal* **18**, 40 (2019).
6. Hollerith, S., Zeiher, J., Rui, J., Rubio-Abadal, A., Walther, V., Pohl, T., Stamper-Kurn, D. M., Bloch, I. & Gross, C. Quantum Gas Microscopy of Rydberg Macrodimers. *Science* **364**, 664–667 (2019).
7. Koepsell, J., Vijayan, J., Sompet, P., Grusdt, F., Hilker, T. A., Demler, E., Salomon, G., Bloch, I. & Gross, C. Imaging Magnetic Polarons in the Doped Fermi-Hubbard Model. *Nature* **572**, 358–362 (2019).
8. Rubio-Abadal, A., Choi, J.-y., Zeiher, J., Hollerith, S., Rui, J., Bloch, I. & Gross, C. Many-Body Delocalization in the Presence of a Quantum Bath. *Physical Review X* **9**, 041014. (2019) (2019).
9. Salomon, G., Koepsell, J., Vijayan, J., Hilker, T. A., Nespolo, J., Pollet, L., Bloch, I. & Gross, C. Direct Observation of Incommensurate Magnetism in Hubbard Chains. *Nature* **565**, 56–60 (2019).
10. Uhrich, P., Gross, C. & Kastner, M. Probing Unitary Two-Time Correlations in a Neutral Atom Quantum Simulator. *Quantum Science and Technology* **4**, 024005 (2019).
11. Compagno, E., Banchi, L., Gross, C. & Bose, S. NOON States via a Quantum Walk of Bound Particles. *Physical Review A* **95**, 012307 (2017).
12. Gross, C. & Bloch, I. Quantum Simulations with Ultracold Atoms in Optical Lattices. *Science* **357**, 995–1001 (2017).
13. Hilker, T. A., Salomon, G., Grusdt, F., Omran, A., Boll, M., Demler, E., Bloch, I. & Gross, C. Revealing Hidden Antiferromagnetic Correlations in Doped Hubbard Chains via String Correlators. *Science* **357**, 484–487 (2017).
14. Zeiher, J., Choi, J.-y., Rubio-Abadal, A., Pohl, T., van Bijnen, R., Bloch, I. & Gross, C. Coherent Many-Body Spin Dynamics in a Long-Range Interacting Ising Chain. *Physical Review X* **7**, 041063 (2017).

15. Boll, M., Hilker, T. A., Salomon, G., Omran, A., Nespolo, J., Pollet, L., Bloch, I. & Gross, C. Spin- and Density-Resolved Microscopy of Antiferromagnetic Correlations in Fermi-Hubbard Chains. *Science* **353**, 1257–1260 (2016).
16. Choi, J.-y., Hild, S., Zeiher, J., Schauß, P., Rubio-Abadal, A., Yefsah, T., Khemani, V., Huse, D. A., Bloch, I. & Gross, C. Exploring the Many-Body Localization Transition in Two Dimensions. *Science* **352**, 1547–1552 (2016).
17. Van Frank, S., Bonneau, M., Schmiedmayer, J., Hild, S., Gross, C., Cheneau, M., Bloch, I., Pichler, T., Negretti, A., Calarco, T. & Montangero, S. Optimal Control of Complex Atomic Quantum Systems. *Scientific Reports* **6**, 34187 (2016).
18. Zeiher, J., van Bijnen, R., Schauß, P., Hild, S., Choi, J.-y., Pohl, T., Bloch, I. & Gross, C. Many-Body Interferometry of a Rydberg-Dressed Spin Lattice. *Nature Physics* **12**, 1095–1099 (2016).
19. Fukuhara, T., Hild, S., Zeiher, J., Schauß, P., Bloch, I., Endres, M. & Gross, C. Spatially Resolved Detection of a Spin-Entanglement Wave in a Bose-Hubbard Chain. *Physical Review Letters* **115**, 035302 (2015).
20. Glaetzle, A. W., Dalmonte, M., Nath, R., Gross, C., Bloch, I. & Zoller, P. Designing Frustrated Quantum Magnets with Laser-Dressed Rydberg Atoms. *Physical Review Letters* **114**, 173002 (2015).
21. Groß, C. Atomic Physics: Fermions under the Microscope. *Nature Photonics* **9**, 482–483 (2015).
22. Groß, C. Tracking Ultracold Many-Body Systems in Real Time. *New Journal of Physics* **17**, 111004 (2015).
23. Gross, C. & Bloch, I. Microscopy of Many-Body States in Optical Lattices. *Annual Review of Cold Atoms and Molecules* **3**, 181–199 (2015).
24. Omran, A., Boll, M., Hilker, T. A., Kleinlein, K., Salomon, G., Bloch, I. & Gross, C. Microscopic Observation of Pauli Blocking in Degenerate Fermionic Lattice Gases. *Physical Review Letters* **115**, 263001 (2015).
25. Schauß, P., Zeiher, J., Fukuhara, T., Hild, S., Cheneau, M., Macrì, T., Pohl, T., Bloch, I. & Gross, C. Crystallization in Ising Quantum Magnets. *Science* **347**, 1455–1458 (2015).
26. Vermersch, B., Punk, M., Glaetzle, A. W., Gross, C. & Zoller, P. Dynamical Preparation of Laser-Excited Anisotropic Rydberg Crystals in 2D Optical Lattices. *New Journal of Physics* **17**, 013008 (2015).
27. Zeiher, J., Schauß, P., Hild, S., Macrì, T., Bloch, I. & Gross, C. Microscopic Characterization of Scalable Coherent Rydberg Superatoms. *Physical Review X* **5**, 031015 (2015).
28. Hild, S., Fukuhara, T., Schauß, P., Zeiher, J., Knap, M., Demler, E., Bloch, I. & Gross, C. Far-from-Equilibrium Spin Transport in Heisenberg Quantum Magnets. *Physical Review Letters* **113**, 147205 (2014).
29. Cattani, F., Gross, C., Oberthaler, M. K. & Ruostekoski, J. Measuring and Engineering Entropy and Spin Squeezing in Weakly Linked Bose–Einstein Condensates. *New Journal of Physics* **15**, 063035 (2013).
30. Endres, M., Cheneau, M., Fukuhara, T., Weitenberg, C., Schauß, P., Gross, C., Mazza, L., Bañuls, M., Pollet, L., Bloch, I. & Kuhr, S. Single-Site- and Single-Atom-Resolved Measurement of Correlation Functions. *Applied Physics B* **113**, 27 (2013).
31. Fukuhara, T., Kantian, A., Endres, M., Cheneau, M., Schauß, P., Hild, S., Bellem, D., Schollwöck, U., Giamarchi, T., Gross, C., Bloch, I. & Kuhr, S. Quantum Dynamics of a Mobile Spin Impurity. *Nature Physics* **9**, 235 (2013).
32. Fukuhara, T., Schauß, P., Endres, M., Hild, S., Cheneau, M., Bloch, I. & Gross, C. Microscopic Observation of Magnon Bound States and Their Dynamics. *Nature* **502**, 76 (2013).
33. Cheneau, M., Barmettler, P., Poletti, D., Endres, M., Schauß, P., Fukuhara, T., Gross, C., Bloch, I., Kollath, C. & Kuhr, S. Light-Cone-like Spreading of Correlations in a Quantum Many-Body System. *Nature* **481**, 484 (2012).

34. Endres, M., Fukuhara, T., Pekker, D., Cheneau, M., Schauß, P., Gross, C., Demler, E., Kuhr, S. & Bloch, I. The Higgs Amplitude Mode at the Two-Dimensional Superfluid/Mott Insulator Transition. *Nature* **487**, 454 (2012).
35. Gross, C. Spin Squeezing, Entanglement and Quantum Metrology with Bose–Einstein Condensates. *J. Phys. B: At., Mol. Opt. Phys.* **45**, 103001 (2012).
36. Schauß, P., Cheneau, M., Endres, M., Fukuhara, T., Hild, S., Omran, A., Pohl, T., Gross, C., Kuhr, S. & Bloch, I. Observation of Spatially Ordered Structures in a Two-Dimensional Rydberg Gas. *Nature* **491**, 87 (2012).
37. Bar-Gill, N., Gross, C., Mazets, I., Oberthaler, M. & Kurizki, G. Einstein-Podolsky-Rosen Correlations of Ultracold Atomic Gases. *Physical Review Letters* **106**, 120404 (2011).
38. Endres, M., Cheneau, M., Fukuhara, T., Weitenberg, C., Schauß, P., Gross, C., Mazza, L., Bañuls, M. C., Pollet, L., Bloch, I. & Kuhr, S. Observation of Correlated Particle-Hole Pairs and String Order in Low-Dimensional Mott Insulators. *Science* **334**, 200 (2011).
39. Gross, C., Estève, J., Oberthaler, M. K., Martin, A. D. & Ruostekoski, J. Local and Spatially Extended Sub-Poisson Atom-Number Fluctuations in Optical Lattices. *Physical Review A* **84**, 011609 (2011).
40. Gross, C., Strobel, H., Nicklas, E., Zibold, T., Bar-Gill, N., Kurizki, G. & Oberthaler, M. K. Atomic Homodyne Detection of Continuous-Variable Entangled Twin-Atom States. *Nature* **480**, 219 (2011).
41. He, Q. Y., Reid, M. D., Vaughan, T. G., Gross, C., Oberthaler, M. & Drummond, P. D. Einstein-Podolsky-Rosen Entanglement Strategies in Two-Well Bose-Einstein Condensates. *Physical Review Letters* **106**, 120405 (2011).
42. Nicklas, E., Strobel, H., Zibold, T., Gross, C., Malomed, B. A., Kevrekidis, P. G. & Oberthaler, M. K. Rabi Flopping Induces Spatial Demixing Dynamics. *Physical Review Letters* **107**, 193001 (2011).
43. Gross, C. & Oberthaler, M. K. Ultrakalte Quantenpendel. *Physik Journal* **9**, 29 (2010).
44. Gross, C., Zibold, T., Nicklas, E., Estève, J. & Oberthaler, M. K. Nonlinear Atom Interferometer Surpasses Classical Precision Limit. *Nature* **464**, 1165 (2010).
45. Theocharis, G., Weller, A., Ronzheimer, J. P., Gross, C., Oberthaler, M. K., Kevrekidis, P. G. & Frantzeskakis, D. J. Multiple Atomic Dark Solitons in Cigar-Shaped Bose-Einstein Condensates. *Physical Review A* **81**, 063604 (2010).
46. Zibold, T., Nicklas, E., Gross, C. & Oberthaler, M. K. Classical Bifurcation at the Transition from Rabi to Josephson Dynamics. *Physical Review Letters* **105**, 204101 (2010).
47. Estève, J., Gross, C., Weller, A., Giovanazzi, S. & Oberthaler, M. K. Squeezing and Entanglement in a Bose-Einstein Condensate. *Nature* **455**, 1216 (2008).
48. Weller, A., Ronzheimer, J. P., Gross, C., Estève, J., Oberthaler, M. K., Frantzeskakis, D. J., Theocharis, G. & Kevrekidis, P. G. Experimental Observation of Oscillating and Interacting Matter Wave Dark Solitons. *Physical Review Letters* **101**, 130401 (2008).
49. Gross, C., Best, T., van Oosten, D. & Bloch, I. Coherent and Incoherent Spectral Broadening in a Photonic Crystal Fiber. *Optics Letters* **32**, 1767 (2007).