

Curriculum Vitae

Personal Information

Family name, First names: PD Dr. habil Wiebe, Jens Bernhard Reinhold
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Date of birth: February 10th 1971
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Education

1991 - 1993 Studies of Physics and Mathematics at RWTH Aachen University, Germany.
1993 - 1997 Studies of Physics at Ruprecht-Karls-Universität Heidelberg, Germany.
1996 - 1997 Diploma-thesis at Physikalisches Institut, group of Prof. Dr. G. zu Putnitz:
Photoacoustical spectroscopy via resonant detection of 2nd sound in superfluid ⁴He.
1998 - 2003 PhD-thesis at the Department of Physics, Universität Hamburg, Germany,
group of Prof. Dr. R. Wiesendanger:
*Development of a 300mK-UHV-STM with 14T magnet
and investigation of a strongly disordered 2DES.*
2020 Habilitation / Privatdozent in the field of experimental physics
at Universität Hamburg, Germany,
Artificial Atomic-Spin Arrays on Solid Surfaces.

Current Position

since 2003 Member of research staff in the group of Prof. Dr. R. Wiesendanger
at the Department of Physics, Universität Hamburg, Germany.
since 2005 Permanent research staff, Department of Physics, Universität Hamburg, Germany.
*Main research areas: artificial spin arrays coupled to itinerant electron systems,
topological materials, Fe-based superconductors, dilute magnetic semiconductors,
spin-resolved scanning tunneling spectroscopy.*

Fellowships and awards

1998 - 2000 Scholarship of the Graduate School GrK 235 *Physik nanostrukturierter Festkörper*
of the german research foundation (DFG), Universität Hamburg, Germany.

Achievements since 1997

- $\approx$ 90 peer-reviewed publications, including 4 Science, 2 Nature, 17 in other Nature Journals, 7 Physical Review Letters, with total citations $>$ 6.000 and h-index 40 (GoogleScholar 05/2025).
- 51 accepted invited/semi-plenary/plenary talks at conferences and workshops
- $\approx$ 3.000.000 € raised third party funding.

Funding and projects

- 2006 - 2009 Member and Principle investigator (PI) of the Collaborative Research Center SFB 508 *Quantenmaterialien* of the German Research Foundation (DFG): Gepris 5481883 (one of two PIs in B4, 246.000 €).
- 2006 - 2015 Member and PI of the Graduate School GrK 1286 *Functional metal-semiconductor hybrid systems* of the German Research Foundation (DFG): Gepris 12387132 (one of two PIs, 510.100 €).
- 2009 - 2012 Member of the Hamburg state excellence initiative: *Nanospintronics*.
- 2010 - 2017 Member and PI of the Collaborative Research Center SFB 668 *Magnetism from the single atom to the nanostructure* of the German Research Foundation (DFG): Gepris 13002249 (one of three PIs in A1, 1.237.500 €).
- 2017 Organizer of a Heraeus-Workshop (one of three organizers, 36.500 €).
- 2013 - 2019 Member and PI of the Priority Programme SPP 1666 *Topological insulators: materials - fundamental properties - devices* of the German Research Foundation (DFG): Gepris 220179758
1st FP: Spin-resolved STS, ARPES, and XMCD of magnetically doped topological insulators
2nd FP: Spin-resolved STS, ARPES, and XMCD of magnetically doped topological insulator heterostructures (with Prof. Ph. Hofmann, Aarhus University) (my funds 1st FP 183.700 €, 2nd FP 209.200 €).
- 2019 - 2023 Member and PI of the Collaborative Research Center SFB 925 *Light induced dynamics and control of correlated quantum systems* of the German Research Foundation (DFG): Gepris 170620586 (one of three PIs in B9, 364.500 €).
- since 2024 Associated Scientists of the Cluster of Excellence *CUI: Advanced Imaging of Matter* of the German Research Foundation (DFG): EXC 2056 - project ID 390715994.
- 2025 - 2028 PI of the DFG project *Spin-lattices coupled to proximity-superconducting Rashba-surface states* of the German Research Foundation (DFG), Gepris 543483081 (with Prof. Dr. S. Lounis, Martin-Luther-Universität Halle-Wittenberg) (my funds 266.570 €).

Supervision of graduate students and postdoctoral fellows

- since 2003 Co-Supervision of 10 Postdocs (plus 2 ongoing), 14 PhD students (plus 2 ongoing), and 10 Master (Diploma) and Bachelor students at the Department of Physics, Universität Hamburg, Germany.

Teaching activities at Universität Hamburg, Germany

- since 2004 Practical courses in Scanning Tunneling Microscopy, (*Physikalisches Praktikum für Fortgeschrittene*), for Bachelor of Physics studies, (approx. 4 to 8 groups each year).
- since 2008 Course-accompanying exercises in Quantum and Statistical Physics (*Physik III*), for Bachelor of Physics studies, (every winter term).
- 2009 - 2018 Course-accompanying exercises in Solid State Physics (*Physik IV*), for Bachelor of Physics studies, (every summer term).
- 2012 - 2014 Practical courses in Scanning Tunneling Microscopy, (*Praktikum Nanostrukturphysik*), for Bachelor of Nanoscience studies, (approx. 4 groups each year).
- since 2019 Lecture, excercises and Practical courses (Master level) *Nanostructure physics II - surface physics and magnetism*, (together with Kirsten von Bergmann, every summer term).

Commissions of trust

- Reviewer of manuscripts submitted to scientific journals, including Nature, Science, Nature Sister Journals (Nature Nanotechnology, Nature Materials, Nature Physics, Nature Communications), Physical Review (Letters and B), Nano Letters, etc.
 - Reviewer of research proposals to the German Research Foundation (DFG).
 - External evaluator of PhD thesis at Universities in Finland, the Netherlands, Spain, Switzerland, UK.
 - Commission member of several W1, W2, and W3 positions at the Universität Hamburg, Germany.
- 2017 Organizer of the 654. WE-Heraeus-Seminar *Topical Insights into Nanoscience using Scanning Probes* (87 Participants), Bad Honnef, Germany.
- 2018 – 2022 Member of the faculty council of the Department of Physics, Universität Hamburg, Germany.
- since 2024 equal opportunity commissioner of the Department of Physics, Universität Hamburg, Germany.

Publications (selection of 10)

In total 89 peer-reviewed publications, * corresponding author, {} number of citations, h-index = 40 (according to Google Scholar 05/2025)

- [1] R. Lo Conte, J. Wiebe, S. Rachel, D.K. Morr, and R. Wiesendanger*,
*Magnet-superconductor hybrid quantum systems:
a materials platform for topological superconductivity*, {7}
Riv. Nuovo Cim. **47**, 453 (2025).
- [2] L. Schneider*, K. That Ton, I. Ioannidis, J. Neuhaus-Steinmetz, Th. Posske,
R. Wiesendanger, and J. Wiebe,
Proximity superconductivity in atom-by-atom crafted quantum dots, {31}
Nature **621**, 60 (2023).
- [3] L. Schneider, P. Beck, T. Posske, D. Crawford, E. Mascot, S. Rachel,
R. Wiesendanger, and J. Wiebe*,
Topological Shiba bands in artificial spin chains on superconductors, {126}
Nature Physics **17**, 943 (2021).
- [4] D.-J. Choi, N. Lorente, J. Wiebe, K. von Bergmann, A. F. Otte,
and A. J. Heinrich,
Colloquium: Atomic spin chains on surfaces, {111}
Reviews of Modern Physics **169**, 041001 (2019).
- [5] A. A. Khajetoorians*, M. Valentyuk, M. Steinbrecher, T. Schlenk, A. Shick,
J. Koloenc, A. I. Lichtenstein, T. O. Wehling, R. Wiesendanger, and J. Wiebe,
Tuning emergent magnetism in a Hund's impurity, {88}
Nature Nanotechnology **10**, 958 (2015).
- [6] A. A. Khajetoorians*, B. Baxevanis, C. Hübner, T. Schlenk, S. Krause,
T. O. Wehling, S. Lounis, A. Lichtenstein, D. Pfannkuche,
J. Wiebe*, and R. Wiesendanger,
Current-Driven Spin Dynamics of Artificially Constructed Quantum Magnets, {272}
Science **339**, 55 (2013).
- [7] A. Khajetoorians, J. Wiebe*, B. Chilian, and R. Wiesendanger,
Realizing All-Spin-Based Logic Operations Atom by Atom, {488}
Science **332**, 1062 (2011).
- [8] A. Khajetoorians, B. Chilian, J. Wiebe*, S. Schuwalow, F. Lechermann,
and R. Wiesendanger,
Detecting excitation and magnetization of individual dopants in a semiconductor, {138}
Nature **467**, 1084 (2010).
- [9] F. Meier, L. Zhou, J. Wiebe*, and R. Wiesendanger,
Revealing Magnetic Interactions from Single-Atom Magnetization Curves, {441}
Science **320**, 82 (2008).
- [10] A. Wachowiak, J. Wiebe, M. Bode*, O. Pietzsch, M. Morgenstern,
and R. Wiesendanger
Direct Observation of Internal Spin-Structure of Magnetic Vortex Cores, {1113}
Science **298**, 577 (2002).

Publications

(May 9th 2025)

Original articles

1. L. Schneider, Ch. von Bredow, H. Kim, K. That Ton, T. Hänke, J. Wiebe, and R. Wiesendanger, Phys. Rev. B **110**, L100505 (2024): *Scanning tunneling spectroscopy study of proximity superconductivity in finite-size quantized surface states.*
2. X. Huang, R. Xiong, C. Hao, P. Beck, B. Sa, J. Wiebe, and R. Wiesendanger, Advanced Materials 2308007 (2024):
Two-dimensional lateral heterojunction arrays with tailored interface band bending.
3. X. Huang, R. Xiong, C. Hao, W. Li, B. Sa, J. Wiebe, and R. Wiesendanger, Advanced Materials **36**, 2309023 (2023):
Experimental Realization of Monolayer α -Tellurene.
4. L. Schneider, K. That Ton, I. Ioannidis, J. Neuhaus-Steinmetz, T. Posske, R. Wiesendanger, and J. Wiebe, Nature **621**, 60 (2023):
Proximity superconductivity in atom-by-atom crafted quantum dots.
5. L. Schneider, Ph. Beck, L. Rózsa, Th. Posske, J. Wiebe, and R. Wiesendanger, Nature Commun. **14**, 2742 (2023):
Probing the topologically trivial nature of end states in antiferromagnetic atomic chains on superconductors.
6. Ph. Beck, B. Nyári, L. Schneider, L. Rózsa, A. Lászlóffy, K. Palotás, L. Szunyogh, B. Ujfalussy, J. Wiebe, and R. Wiesendanger, Communications Physics **6**, 83 (2023):
Search for large topological gaps in atomic spin chains on proximitized superconducting heavy-metal layers.
7. P. Beck, L. Schneider, R. Wiesendanger, and J. Wiebe, Phys. Rev. B **107**, 024426 (2023):
Systematic study of Mn atoms, artificial dimers, and chains on superconducting Ta(110).
8. D. Crawford, E. Mascot, M. Shimizu, L. Schneider, Ph. Beck, J. Wiebe, R. Wiesendanger, H. O. Jeschke, D. K. Morr, and S. Rachel, npj Quantum Materials **7**, 117 (2022):
Majorana modes with side features in magnet-superconductor hybrid systems.
9. X. Huang, R. Xiong, K. Volckaert, C. Hao, D. Biswas, M. Bianchi, Ph. Hofmann, Ph. Beck, J. Warmuth, B. Sa, J. Wiebe, and R. Wiesendanger, Advanced Functional Materials **32**, 2208281 (2022):
Experimental realization of semiconducting monolayer Si_2Te_2 films.

10. J. J. Goedecke, L. Schneider, Y. Ma, K. Ton That, D. Wang, J. Wiebe, and R. Wiesendanger,
ACS Nano **16**, 14066 (2022):
Correlation of magnetism and disordered Shiba bands in Fe monolayer islands on Nb(110).
11. Lucas Schneider, Philip Beck, Jannis Neuhaus-Steinmetz, Levente Rózsa, Thore Posske,
Jens Wiebe, and Roland Wiesendanger,
Nature Nanotechnology **17**, 384 (2022):
Precursors of Majorana modes and their length-dependent energy oscillations probed at both ends of atomic Shiba chains.
12. Ph. Beck, L. Schneider, L. Bachmann, J. Wiebe, and R. Wiesendanger,
Phys. Rev. Materials **6**, 024801 (2022):
Structural and superconducting properties of ultrathin Ir films on Nb(110).
13. J. Fikáček, J. Warmuth, F. Arnold, C. Piamonteze, Z. Mao, V. Holý, Ph. Hofmann, M. Bremholm, J. Wiebe, R. Wiesendanger, and J. Honolka
J. Magn. Magn. Mater. **540**, 168426 (2021):
Disorder-induced time effect in the antiferromagnetic domain state of Fe_{1+y}Te .
14. A. Kamlapure, L. Cornils, R. Žitko, M. Valentyuk, R. Mozara, S. Pradhan, J. Fransson, A. I. Lichtenstein, J. Wiebe, and R. Wiesendanger
Nano Letters **21**, 6748 (2021):
Correlation of Yu–Shiba–Rusinov States and Kondo Resonances in Artificial Spin Arrays on an s-Wave Superconductor.
15. L. Schneider, P. Beck, T. Posske, D. Crawford, E. Mascot, S. Rachel, R. Wiesendanger, and J. Wiebe
Nature Physics **17**, 943 (2021):
Topological Shiba bands in artificial spin chains on superconductors.
16. P. Beck, L. Schneider, L. Rózsa, K. Palotás, A. Lászlóffy, L. Szunyogh, J. Wiebe, and R. Wiesendanger
Nature Communications **12**, 2040 (2021):
Spin-orbit coupling induced splitting of Yu-Shiba-Rusinov states in antiferromagnetic dimers.
17. D. Wang, J. Wiebe, R. Zhong, G. Gu, and R. Wiesendanger
Phys. Rev. Lett., **126**, 076802 (2021):
Spin-Polarized Yu-Shiba-Rusinov States in an Iron-Based Superconductor.
18. L. Schneider, P. Beck, J. Wiebe, and R. Wiesendanger
Science Advances, **7**, 4, eabd7302 (2021):
Atomic-scale spin-polarization maps using functionalized superconducting probes.
19. L. Schneider, S. Brinker, M. Steinbrecher, J. Hermenau, Th. Posske, M. dos Santos Dias, S. Lounis, R. Wiesendanger, and J. Wiebe
Nature Communications, **11**, 4707 (2020):
Controlling in-gap end states by linking nonmagnetic atoms and artificially-constructed spin chains on superconductors.

20. R. Mozara, A. Kamlapure, M. Valentyuk, L. Cornils, A. I. Lichtenstein, J. Wiebe, and R. Wiesendanger
Phys. Rev. Materials, **3**, 094801 (2019):
Atomically thin oxide layer on the elemental superconductor Ta(001) surface.
21. L. Schneider, M. Steinbrecher, L. Rózsa, J. Bouaziz, K. Palotás, M. dos Santos Dias, S. Lounis, J. Wiebe, and R. Wiesendanger
npj Quantum Materials **4**, 42 (2019):
Magnetism and in-gap states of 3d transition metal atoms on superconducting Re.
22. V. Tkáč, K. Výborný, V. Komanický, J. Warmuth, M. Michiardi, A. S. Ngankeu, M. Vondráček, R. Tarasenko, M. Vališka, V. Stetsovych, K. Carva, I. Garate, M. Bianchi, J. Wiebe, V. Holý, Ph. Hofmann, G. Springholz, V. Sechovský, and J. Honolka
Phys. Rev. Lett. **123**, 036406 (2019):
Influence of an Anomalous Temperature Dependence of the Phase Coherence Length on the Conductivity of Magnetic Topological Insulators.
23. J. Hermenau, S. Brinker, M. Marciani, M. Steinbrecher, M. dos Santos Dias, R. Wiesendanger, S. Lounis, and J. Wiebe
Nature Communications **10**, 2565 (2019):
Stabilizing spin systems via symmetrically tailored RKKY interactions.
24. A. Kamlapure, L. Cornils, J. Wiebe, and R. Wiesendanger,
Nature Communications **9**, 3253 (2018):
Engineering the spin couplings in atomically crafted spin chains on an elemental superconductor.
25. M. Steinbrecher, R. Rausch, K. T. That, J. Hermenau, A. A. Khajetoorians, M. Potthoff, R. Wiesendanger, and J. Wiebe,
Nature Communications **9**, 2853 (2018):
Non-collinear spin states in bottom-up fabricated atomic chains.
26. U. R. Singh, J. Warmuth, A. Kamlapure, L. Cornils, M. Bremholm, Ph. Hofmann, J. Wiebe, and R. Wiesendanger,
Phys. Rev. B **97**, 144513 (2018):
Enhanced spin-ordering temperature in ultrathin FeTe films grown on a topological insulator.
27. J. Warmuth, M. Bremholm, P. Hofmann, J. Wiebe, and R. Wiesendanger,
npj Quantum Materials **3**, 21 (2018):
Domain imaging across the magneto-structural phase transitions in Fe_{1+y}Te .
28. Jan Hermenau, Markus Ternes, Manuel Steinbrecher, Roland Wiesendanger, and J. Wiebe,
Nano Letters **18**, 1978 (2018):
Long Spin-Relaxation Times in a Transition-Metal Atom in Direct Contact to a Metal Substrate.
29. F. Arnold, J. Warmuth, M. Michiardi, J. Fikáček, M. Bianchi, J. Hu, Z. Mao, J. Miwa, U. R. Singh, M. Bremholm, R. Wiesendanger, J. Honolka, T. Wehling, J. Wiebe, and

- P. Hofmann,
J. Phys.: Condens. Matter **30**, (2018):
Electronic structure of $\text{Fe}_{1.08}\text{Te}$ bulk crystals and epitaxial FeTe thin films on Bi_2Te_3 .
30. L. Cornils, A. Kamlapure, L. Zhou, S. Pradhan, A. A. Khajetoorians, J. Fransson, J. Wiebe, and R. Wiesendanger,
Phys. Rev. Lett. **119**, 197002 (2017):
Spin-Resolved Spectroscopy of the Yu-Shiba-Rusinov States of Individual Atoms.
 31. J. Hermenau, J. Ibañez-Azpiroz, Chr. Hübner, A. Sonntag, B. Baxevanis, K. T. Ton, M. Steinbrecher, A. A. Khajetoorians, M. dos Santos Dias, S. Blügel, R. Wiesendanger, S. Lounis, and J. Wiebe,
Nature Communications **8**, 642 (2017):
A gateway towards non-collinear spin processing using three-atom magnets with strong substrate coupling.
 32. A. Kamlapure, S. Manna, L. Cornils, T. Hänke, M. Bremholm, Ph. Hofmann, J. Wiebe, and R. Wiesendanger,
Phys. Rev. B **95**, 104509 (2017):
Spatial variation of the two-fold anisotropic superconducting gap in a monolayer of $\text{FeSe}_{0.5}\text{Te}_{0.5}$ on a topological insulator.
 33. S. Manna, A. Kamlapure, L. Cornils, T. Hänke, E. M. J. Hedegaard, M. Bremholm, B. B. Iversen, Ph. Hofmann, J. Wiebe, and R. Wiesendanger,
Nature Communications **8**, 14074 (2017):
Interfacial superconductivity in a bi-collinear antiferromagnetically ordered FeTe monolayer on a topological insulator.
 34. U. R. Singh, J. Warmuth, V. Markmann, J. Wiebe, and R. Wiesendanger,
J. Phys.: Condens. Matter **29**, 025004 (2017):
Structural and electronic properties of ultrathin FeSe films grown on $\text{Bi}_2\text{Se}_3(0001)$ studied by STM/STS.
 35. T. Hänke, U. R. Singh, L. Cornils, S. Manna, A. Kamlapure, M. Bremholm, E. M. J. Hedegaard, B. B. Iversen, Ph. Hofmann, J. Hu, Z. Mao, J. Wiebe, and R. Wiesendanger,
Nature Commun. **8**, 13939 (2017):
Reorientation of the diagonal double-stripe spin structure at Fe_{1+y}Te bulk and thin-film surfaces.
 36. M. Vondráček, L. Cornils, J. Minár, J. Warmuth, M. Michiardi, C. Piamonteze, L. Barreto, J. A. Miwa, M. Bianchi, Ph. Hofmann, L. Zhou, A. Kamlapure, A. A. Khajetoorians, R. Wiesendanger, J.-L. Mi, B.-B. Iversen, S. Mankovsky, St. Borek, H. Ebert, M. Schüler, T. Wehling, J. Wiebe, and J. Honolka,
Phys. Rev. B **94**, 161114(R) (2016):
Nickel: The time-reversal symmetry conserving partner of iron on a chalcogenide topological insulator.
 37. M. Vališka, J. Warmuth, M. Michiardi, M. Vondráček, A. S. Ngankeu, V. Holý, V. Sechovský, G. Springholz, M. Bianchi, J. Wiebe, P. Hofmann and J. Honolka,

- Appl. Phys. Lett. **108**, 262402 (2016):
Topological insulator homojunctions including magnetic layers: The example of n-type (n-QLs $\text{Bi}_2\text{Se}_3/\text{Mn-Bi}_2\text{Se}_3$) heterostructures.
38. J. Warmuth, A. Bruix, M. Michiardi, T. Hanke, M. Bianchi, J. Wiebe, R. Wiesendanger, B. Hammer, P. Hofmann, and A. A. Khajetoorians,
 Phys. Rev. B **93**, 165437 (2016):
Band-gap engineering by Bi intercalation of graphene on Ir(111).
 39. A. A. Khajetoorians, M. Steinbrecher, M. Ternes, M. Bouhassoune, M. dos Santos Dias, S. Lounis, J. Wiebe, and R. Wiesendanger,
 Nature Communications **7**, 10620 (2016):
Tailoring the chiral magnetic interaction between two individual atoms.
 40. M. Steinbrecher, A. Sonntag, M. dos Santos Dias, M. Bouhassoune, S. Lounis, J. Wiebe, R. Wiesendanger, and A. A. Khajetoorians,
 Nature Communications **7**, 10454 (2016):
Absence of a spin-signature from a single Ho adatom as probed by spin-sensitive tunneling.
 41. P. Loptien, L. Zhou, , A. A. Khajetoorians, J. Wiebe, and R. Wiesendanger,
 Surf. Sci. **643**, 6 (2016):
Tunneling into thin superconducting films: Interface-induced quasiparticle lifetime reduction.
 42. A. A. Khajetoorians, M. Valentyuk, M. Steinbrecher, T. Schlenk, A. Shick, J. Kolorenc, A. I. Lichtenstein, T. O. Wehling, R. Wiesendanger, and J. Wiebe,
 Nature Nanotechnology **10**, 958 (2015):
Tuning emergent magnetism in a Hund's impurity.
 43. F. Pielmeier, G. Landolt, B. Slomski, S. Muff, J. Berwanger, A. Eich, A. A. Khajetoorians, J. Wiebe, Z. S. Aliev, M. B. Babanly, R. Wiesendanger, J. Osterwalder, E. V. Chulkov, F. J. Giessibl, and J. H. Dil
 New Journ. Phys. **17**, 23067 (2015):
Response of the topological surface state to surface disorder in TlBiSe_2 .
 44. A. Eich, M. Michiardi, G. Bihlmayer, X.-G. Zhu, J.-L. Mi, Bo B. Iversen, R. Wiesendanger, Ph. Hofmann, A. A. Khajetoorians, and J. Wiebe,
 Phys. Rev. B **90**, 155414 (2014):
Intra- and interband electron scattering in a hybrid topological insulator: Bismuth bilayer on Bi_2Se_3 .
 45. P. Loptien, L. Zhou, A. A. Khajetoorians, J. Wiebe, and R. Wiesendanger,
 J. Phys.: Condens. Matter **26**, 425703 (2014):
Superconductivity of lanthanum revisited: enhanced critical temperature in the clean limit.
 46. P. Loptien, L. Zhou, J. Wiebe, A. A. Khajetoorians, J. L. Mi, B. B. Iversen, Ph. Hofmann, and R. Wiesendanger,

- Phys. Rev. B **89**, 085401 (2014):
Screening and atomic-scale engineering of the potential at a topological insulator surface.
47. A. A. Khajetoorians and J. Wiebe,
 Science **344**, 976 (2014):
Hitting the limit of magnetic anisotropy.
 48. A. A. Khajetoorians, T. Schlenk, B. Schweglinghaus, M. dos Santos Dias, M. Steinbrecher, M. Bouhassoune, S. Lounis, J. Wiebe, and R. Wiesendanger,
 Phys. Rev. Lett. **111**, 157204 (2013):
Spin Excitations of Individual Fe Atoms on Pt(111): Impact of the Site-Dependent Giant Substrate Polarization.
 49. T. Schlenk, M. Bianchi, M. Koleini, A. Eich, O. Pietzsch, T. O. Wehling, T. Frauenheim, A. Balatsky, J.-L. Mi, B. B. Iversen, J. Wiebe, A. A. Khajetoorians, Ph. Hofmann, and R. Wiesendanger,
 Phys. Rev. Lett. **110**, 126804 (2013):
Controllable Magnetic Doping of the Surface State of a Topological Insulator.
 50. A. A. Khajetoorians, B. Baxevanis, C. Hübner, T. Schlenk, S. Krause, T. O. Wehling, S. Lounis, A. Lichtenstein, D. Pfannkuche, J. Wiebe, and R. Wiesendanger,
 Science **339**, no. 6115 pp (2013):
Current-Driven Spin Dynamics of Artificially Constructed Quantum Magnets.
 51. K. Hashimoto, T. Champel, S. Florens, C. Sohrmann, J. Wiebe, Y. Hirayama, R. A. Römer, R. Wiesendanger, and M. Morgenstern,
 Phys. Rev. Lett. **109**, 116805 (2012):
Robust Nodal Structure of Landau Level Wave Functions Revealed by Fourier Transform Scanning Tunneling Spectroscopy.
 52. M. Bianchi, R. C. Hatch, Z. Li, P. Hofmann, F. Song, J. Mi, B. B. Iversen, Z. M. Abd El-Fattah, P. Löptien, L. Zhou, A. A. Khajetoorians, J. Wiebe, R. Wiesendanger, and J. W. Wells,
 ACS Nano **6**, 7009 (2012):
Robust Surface Doping of Bi_2Se_3 by Rubidium Intercalation.
 53. J. Honolka, A. A. Khajetoorians, V. Sessi, T. O. Wehling, S. Stepanow, J.-L. Mi, B. B. Iversen, T. Schlenk, J. Wiebe, N. B. Brookes, A. I. Lichtenstein, Ph. Hofmann, K. Kern, and R. Wiesendanger,
 Phys. Rev. Lett. **108**, 256811 (2012):
In-plane magnetic anisotropy of Fe atoms on $\text{Bi}_2\text{Se}_3(111)$.
 54. A. A. Khajetoorians, J. Wiebe, B. Chilian, S. Lounis, S. Blügel, and R. Wiesendanger,
 Nature Physics **8**, 497 (2012):
Atom-by-atom engineering and magnetometry of tailored nanomagnets.
 55. S. V. Eremeev, G. Landolt, T. V. Menshchikova, B. Slomski, Y. M. Koroteev, Z. S. Aliev, M. B. Babanly, J. Henk, A. Ernst, L. Patthey, A. Eich, A. A. Khajetoorians, J. Hagemeister, O. Pietzsch, J. Wiebe, R. Wiesendanger, P. M. Echenique, S. S. Tsirkin,

- I. R. Amiraslanov, J. H. Dil, and E. V. Chulkov,
Nature Communications **3**, 635 (2012):
Atom-specific spin mapping and buried topological states in a homologous series of topological insulators.
56. B. Chilian, A. A. Khajetoorians, S. Lounis, A. T. Costa, D. L. Mills, J. Wiebe, and R. Wiesendanger,
Phys. Rev. B **84**, 212401 (2011):
Anomalously large g -factor of single atoms adsorbed on a metal substrate.
 57. B. Chilian, A. A. Khajetoorians, J. Wiebe, and R. Wiesendanger,
Phys. Rev. B **83**, 195431 (2011):
Experimental variation and theoretical analysis of the inelastic contribution to atomic spin excitation spectroscopy.
 58. A. A. Khajetoorians, J. Wiebe, B. Chilian, and R. Wiesendanger,
Science **332**, 1062 (2011):
Realizing All-Spin-Based Logic Operations Atom by Atom.
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Detecting excitation and magnetization of individual dopants in a semiconductor.
 62. L. Zhou, F. Meier, J. Wiebe, and R. Wiesendanger,
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Inversion of spin polarization above individual magnetic adatoms.
 63. L. Zhou, J. Wiebe, S. Lounis, E. Vedmedenko, F. Meier, S. Blügel, P. H. Dederichs, and R. Wiesendanger,
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Strength and directionality of surface Ruderman-Kittel-Kasuya-Yosida interaction mapped on the atomic scale.
 64. S. Modesti, H. Gutzmann, J. Wiebe, and R. Wiesendanger,
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Correction of systematic errors in scanning tunneling spectra on semiconductor surfaces: The energy gap of Si(111)-7x7 at 0.3 K.

65. K. Hashimoto, C. Sohrmann, J. Wiebe, T. Inaoka, F. Meier, Y. Hirayama, R. A. Römer, R. Wiesendanger, and M. Morgenstern,
Phys. Rev. Lett. **101**, 256802 (2008):
Quantum Hall Transition in Real Space: From Localized to Extended States.
66. F. Meier, L. Zhou, J. Wiebe, and R. Wiesendanger,
Science **320**, 82 (2008):
Revealing Magnetic Interactions from Single-Atom Magnetization Curves.
67. F. Marczinowski, J. Wiebe, F. Meier, K. Hashimoto, and R. Wiesendanger,
Phys. Rev. B **77**, 115318 (2008):
Effect of charge manipulation on scanning tunneling spectra of single Mn acceptors in InAs.
68. F. Marczinowski, J. Wiebe, J.-M. Tang, M. E. Flatté, F. Meier, M. Morgenstern, and R. Wiesendanger,
Phys. Rev. Lett. **99**, 157202 (2007):
Local Electronic Structure near Mn Acceptors in InAs: Surface-Induced Symmetry Breaking and Coupling to Host States.
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Phys. Rev. B **75**, 165405 (2007):
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71. F. Meier, K. von Bergmann, P. Ferriani, J. Wiebe, M. Bode, K. Hashimoto, S. Heinze, and R. Wiesendanger,
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A 300 mK ultra-high vacuum scanning tunneling microscope for spin-resolved spectroscopy at high energy resolution.
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Photoemission on two-dimensional electron systems.
 81. M. Foerste, H. Guenther, O. Riediger, J. Wiebe, G. zu Putlitz,
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Temperature dependent mobility measurements of alkali-earth ions in superfluid helium (^4He).
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Review articles

83. R. Lo Conte, J. Wiebe, S. Rachel, D.K. Morr, and R. Wiesendanger, Riv. Nuovo Cim. **47**, 453 (2025):
Magnet-superconductor hybrid quantum systems: a materials platform for topological superconductivity.
84. D.-J. Choi, N. Lorente, J. Wiebe, K. von Bergmann, A. F. Otte, and A. J. Heinrich, Rev. Mod. Phys. **91**, 041001 (2019):
Colloquium: Atomic spin chains on surfaces.
85. J. Wiebe, L. Zhou, and R. Wiesendanger, J. Phys. D: Appl. Phys. **44**, 464009 (2011):
Atomic magnetism revealed by spin-resolved scanning tunnelling spectroscopy.

Book contributions

86. J. Wiebe, A. A. Khajetoorians, and R. Wiesendanger, in: Atomic- and Nano-Scale Magnetism (ed. by and R. Wiesendanger), Springer Nature Switzerland (2018), ISBN: 978-3-319-99557-1:
Magnetic spectroscopy of individual atoms, chains and nanostructures.
87. J. Brede, B. Chilian, A. A. Khajetoorians, J. Wiebe, and R. Wiesendanger, in: Handbook of Spintronics (ed. by Y. Xu, D. Awschalom, and J. Nitta), Canopus Academic Publishing and Springer (2016), ISBN: 978-94-007-7604-3:
Atomic-scale spintronics.
88. M. Morgenstern, J. Wiebe, F. Marczinowski, and R. Wiesendanger, in: Quantum Materials (ed. by D. Heitmann), Springer (2010), ISBN: 978-3-642-10552-4:
Scanning tunneling spectroscopy on III-V materials: Effects of dimensionality, magnetic field, and magnetic impurities.

Public outreach articles

89. J. Wiebe, A. A. Khajetoorians, B. Chilian, and R. Wiesendanger, Physik in unserer Zeit **42**, 162 (2011):
Logik aus atomaren Spins.

Invited talks at international conferences

1. 22.6.2025: J. Wiebe,
STM 2025, Ewha Campus Complex, Seoul (South Korea):
Multiorbital Yu-Shiba-Rusinov band engineering: spin arrays on superconductors
(plenary talk)
2. 29.8.2024: J. Wiebe,
BalCon NAQM 2024, Göteborg (Sweden):
Using proximitized quantum corral eigenmodes for non-local detection of Yu-Shiba-Rusinov states
3. 10.5.2024: J. Wiebe,
15th International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN-15), Suzhou (China):
Atom-by-atom engineering of magnet-superconductor hybrid systems towards the realization of Majorana quasiparticles
4. 28.02.2024: J. Wiebe,
EU-ITN SPEAR Workshop, Hamburg (Germany):
Emergent phenomena in spin lattices coupled to BCS superconductors.
5. 11.09.2023: J. Wiebe,
The third spins on surfaces workshop (SoS III), San Sebastian (Spain):
Proximity superconductivity in atom-by-atom crafted quantum dots.
6. 07.09.2023: J. Wiebe, L. Schneider, K. That Ton, I. Ioannidis, J. Neuhaus-Steinmetz, T. Posske, R. Wiesendanger,
CMD30 FisMat, Milano (Italy):
Proximity superconductivity in atom-by-atom crafted quantum dots.
7. 30.03.2023: J. Wiebe,
DPG Spring Meeting of the Condensed Matter Section (SKM) 2023, Dresden (Germany):
Experimental study of minigaps and end states in bottom-up designed multi-orbital Shiba chains
8. 18.10.2022: J. Wiebe,
International Conference on Quantum Materials and Technologies ICQMT2022, Bodrum (Turkey):
Search for Large Topological Gaps and Isolated Majorana Bound States in Atom-by-Atom Fabricated Shiba Chains
9. 15.12.2021: J. Wiebe,
virtual - XXI International Workshop on Physics of Semiconductor Devices (IWPSD 2021), Delhi (India):
Length-dependent energy oscillations of precursors of Majoranas detected on both ends of Shiba chains

10. 23.10.2021: J. Wiebe,
virtual - 7th International Conference on Superconductivity and Magnetism, Bodrum (Turkey):
Study of Artificial Spin Chains on Superconductors as to Topological Superconductivity
11. 14.10.2021: J. Wiebe,
virtual - Low dimensional superconducting hybrids for novel quantum functionalities, College de France, Paris (France):
Topological gaps and precursors of Majorana modes in artificial Shiba chains
12. 20.8.2021: J. Wiebe,
virtual - 2021 Molecular Foundry User Meeting, Lawrence Berkeley National Laboratory (USA):
Evidence for p-wave pairing and energy oscillations of precursor Majoranas in artificial finite-size Shiba chains
13. 10.5.2021: J. Wiebe,
virtual - Atomic-scale quantum materials colloquium, Aalto University (Finland):
Evidence for p-wave pairing and hybridizing Majoranas in artificial finite-size Shiba chains
14. 2.3.2021: J. Wiebe,
virtual - DPG Spring Meeting of the Surface Science Division, virtual (Germany):
Artificial spin chains on superconductor surfaces
15. 28.10.2019: J. Wiebe,
704th WE-Heraeus-Seminar: Exploring the Limits of Nanoscience with Scanning Probe Methods, Bad Honnef (Germany):
STS of spin chains built on superconductors
16. 9.4.2019: J. Wiebe,
International Focus Workshop „Bound states in superconductors and interfaces“, bos-sa19, Dresden (Germany):
Yu-Shiba-Rusinov bands of artificial spin chains on high-Z superconductors
17. 23.1.2019: J. Wiebe,
Physics@Veldhoven 2019, Veldhoven (The Netherlands):
Emulation of spin systems via artificial arrays of magnetic atoms
18. 12.9.2018: J. Wiebe,
Spins on Surfaces II (SOS2), San Sebastian (Spain):
Emulation of Spin Systems via Artificial Arrays of Magnetic Atoms
19. 30.7.2018: J. Wiebe,
SPSTM-7 & LTSPM-1 International Conference 2018, Nijmegen (The Netherlands):
Emulation of Spin Systems via Artificial Arrays of Magnetic Atoms
20. 28.6.2018: J. Wiebe,
Fuerzas y Tunel 2018, Jaca (Spain):
Emulation of Spin Systems via Artificial Arrays of Magnetic Atoms

21. 1.2.2018: J. Wiebe,
2nd Otto Stern Symposium, Hamburg (Deutschland):
Artificial Arrays of Magnetic Atoms: Atomic Bits, Logic Gates, and Quantum Simulators
22. 22.11.2017: M. Steinbrecher, K. T. That, R. Rausch, J. Hermenau, M. Potthoff, A. A. Khajetoorians, J. Wiebe, R. Wiesendanger,
654th WE-Heraeus Seminar: Topical Insights into Nanoscience using Scanning Probes, Bad Honnef (Germany):
Spin-spirals in bottom-up fabricated Fe chains induced by Dzyaloshinskii-Moriya interaction
23. 29.6.2017: J. Wiebe,
SFB 668 International Symposium, Hamburg (Germany):
Artificial arrays of magnetic atoms on metallic surfaces
24. 8.9.2016: J. Wiebe,
Spins on Surfaces (SoS), San Sebastian (Spain):
Heisenberg and Dzyaloshinskii-Moriya contributions to substrate-electron mediated interactions between atoms on surfaces
25. 7.3.2016: J. Wiebe,
80th Spring Conference, Deutsche Physikalische Gesellschaft, Regensburg (Germany):
Excitations and dynamics of non-collinear magnetization states in tailored adatom arrays
26. 5.11.2015: J. Wiebe,
598th WE-Heraeus-Seminar: Frontiers in Scanning Probe Microscopy, Bad Honnef (Germany):
Non-collinear spin states induced by Dzyaloshinskii-Moriya type RKKY coupling
27. 21.9.2015: J. Wiebe,
IBM Max Planck Workshop on Spins on Surfaces, Almaden, San Jose (USA):
Artificial arrays of coupled magnetic atoms on metallic surfaces
28. 24.06.2015: J. Wiebe,
7th International Conference on Scanning Probe Spectroscopy and Related Methods, Poznan (Poland):
Inelastic and spin-resolved scanning tunneling spectroscopy on arrays of coupled magnetic adatoms
29. 19.02.2015: J. Wiebe,
International Symposium on Quantum System and Nuclear Spin Related Phenomena (QSNS2015), Miyagi (Japan):
Tailoring ground states and dynamics of bottom-up engineered arrays of atomic spins on surfaces
30. 26.10.2014: J. Wiebe,
Spintronics and Magnetochemistry on the Atomic and Molecular Level, Monte Verità, Ascona (Switzerland):
Tailoring Ground States and Dynamics of Bottom-Up Engineered Arrays of Atomic Spins on Surfaces

31. 28.7.2014: J. Wiebe,
PASP VIII, Washington (USA):
Using single atom magnetometry to develop atom-scale spintronics
32. 3.4.2013: J. Wiebe,
2013 MRS Spring Meeting and Exhibit, San Francisco (USA):
Tailoring Ground States and Dynamics of Bottom-Up Engineered Arrays of Atomic Spins
33. 11.9.2012: J. Wiebe,
6th International Conference on Scanning Probe Spectroscopy (SPS'12) and 4th International Workshop on Spin-Polarized Scanning Tunneling Microscopy (SPSTM-4), Timmendorfer Strand (Germany):
Tailoring ground states and dynamics of bottom-up engineered nanomagnets.
34. 3.7.2012: J. Wiebe,
7th international workshop on nano-scale spectroscopy and nanotechnology (NSS-7), ETHZ and PSI, Zürich (Switzerland):
Tailoring ground states and dynamics of bottom-up engineered nanomagnets.
35. 10.4.2012: J. Wiebe,
1st international workshop on scanning probe microscopies, laboratory of advance microscopies (LMA), Zaragoza (Spain):
Atom-by-atom fabrication and magnetometry of model magnetic systems.
36. 28.11.2011: J. Wiebe,
493. WE-Heraeus-Seminar, Bad Honnef (Germany):
Magnetometry of Single Atoms and Bottom-Up Nanostructures using Spin-Polarized Scanning Tunneling Spectroscopy.
37. 28.9.2011: J. Wiebe,
4th Nanospintronics network meeting, Fagerudd (Sweden):
Bottom-up engineering and magnetometry of model nanomagnets by spin-resolved scanning tunneling microscopy.
38. 8.9.2011: J. Wiebe,
International Conference on Energy-Aware High Performance Computing, Hamburg (Germany):
Towards Atomic-Spin Based Computation: Realizing Logic Operations Atom by Atom.
39. 29.7.2011: J. Wiebe,
SPIRE-Workshop *The Spin Triangle*, Hamburg (Germany):
Magnetic dopants in semiconductors
40. 6.7.2011: J. Wiebe,
Workshop on *Novel Trends in Optics and Magnetism of Nanostructures*, Augustow (Poland):
Spin Excitation and Magnetometry of Artificial Nanostructures Built Atom by Atom.

41. 24.03.2011: J. Wiebe,
2011 APS March Meeting, Dallas, Texas (USA):
Detecting excitation and magnetization of individual dopants in a semiconductor two-dimensional electron gas.
42. 18.11.2010: J. Wiebe,
55th Annual Conference on Magnetism and Magnetic Materials (MMM 2010), Atlanta, Georgia (USA):
Imaging magnetic interactions in nanostructures built from individual adatoms.
43. 09.10.2010: J. Wiebe,
15th International Conference on Solid Films and Surfaces (ICSFS-15), Beijing (China):
Detecting excitation and magnetization of individual dopants in a semiconductor
44. 22.9.2010: J. Wiebe,
3rd Nordforsk Nanospintronics Workshop, Norköping (Sweden):
Magnetic Imaging and Excitation of Nanostructures Built from Individual Atoms
45. 17.06.2010: J. Wiebe,
European Symposium on Nanospintronics, Hamburg (Germany):
Imaging magnetic interactions in nanostructures built from individual adatoms.
46. 30.11.2009: J. Wiebe,
3rd International Symposium on Vortex Dynamics, Hamburg (Germany):
Ultimate Spatial Resolution of Spin Structures: From Magnetic Vortex Cores to Individual Atoms.
47. 24.9.2009: J. Wiebe,
10th International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN 10), Granada (Spain):
Atomic scale mapping of magnetic interactions in adatom nanostructures.
48. 23.7.2009: J. Wiebe, L. Zhou, S. Lounis, E. Y. Vedmedenko, F. Meier, P. H. Dederichs, S. Blügel and R. Wiesendanger,
20th International Colloquium on Magnetic Films and Surfaces (ICMFS 2009), Berlin (Germany):
Atomic Scale Mapping of Magnetism in Adatom Nanostructures.
49. 20.7.2009: J. Wiebe, L. Zhou, S. Lounis, E. Y. Vedmedenko, F. Meier, P. H. Dederichs, S. Blügel, and R. Wiesendanger,
5th International Symposium on Scanning Probe Spectroscopy and Related Methods (SPS 09), Wasowo (Poland):
Using Single-Atom Magnetization Curves to Study Interactions on the Atomic Scale.
50. 21.7.2008: J. Wiebe, F. Meier, L. Zhou, and R. Wiesendanger,
International Conference on Nanoscience and Technology, Keystone, Colorado (USA):
Probing Single-Atom Magnetization Curves by Subkelvin Spin-Polarized STS.

51. 10.3.2008: J. Wiebe,
2008 APS March Meeting, New Orleans, Louisiana (USA):
Subkelvin spin polarized STM: measuring magnetization curves of individual adatoms.

Invited talks at other research institutions

- 25.6.2024: J. Wiebe,
Wigner Research Centre for Physics, Dr. Balazs Ujfalussy, Budapest (Hungary):
Atom-by-atom engineering of magnet-superconductor hybrid systems towards the realization of Majorana quasiparticles.
- 21.6.2024: J. Wiebe,
CUI Talk, CFEL, Hamburg (Germany):
Spin-resolved scanning tunnel spectroscopy of artificial spin-lattices: emulation of complex electron phases.
- 6.5.2024: J. Wiebe,
Huazhong University of Science and Technology School of Physics, Wuhan (China):
Atom-by-atom engineering of magnet-superconductor hybrid systems towards the realization of Majorana quasiparticles.
- 01.12.2022: J. Wiebe,
Würzburg ToCoTronics Colloquium, Würzburg (Germany),
Tweaking atom-by-atom fabricated Shiba chains towards larger topological minigaps.
- 10.08.2022: J. Wiebe,
Lecture at the Center for Quantum Nanoscience, Institute for Basic Science and Ewha Womans University, Seoul (South Korea):
Superconductivity, interaction with spins and topological superconductivity
- 08.08.2022: J. Wiebe,
Seminar talk at the Center for Quantum Nanoscience, Institute for Basic Science and Ewha Womans University, Seoul (South Korea):
Search for Large Topological Gaps and Isolated Majorana Bound States in Atom-by-Atom Fabricated Shiba Chains
- 15.12.2021: J. Wiebe,
virtual - Condensed Matter Seminar, Department of Physics, The Hong Kong University of Science and Technology, Hong Kong (China):
Topological Gaps and Precursors of Majorana Modes in Atom-by-Atom Fabricated Shiba Chains
- 16.11.2021: J. Wiebe,
virtual - Seminar GDR Nanosciences with near-field microscopy under ultra high vacuum, (France):
Topological gaps and precursors of Majorana modes in artificial Shiba chains
- 17.6.2021: J. Wiebe,
virtual - Seminar at the Laboratoire de Physique et d'Étude des Matériaux Condensed

Matter Physics (LPEM), École Supérieure de Physique et de Chimie Industrielles (ESP-CI) Paris (France):

Evidence for p-wave pairing and energy oscillations of precursor Majoranas in artificial finite-size Shiba chains

- 31.3.2021: J. Wiebe,
virtual - Seminar in Condensed Matter Physics, Physik-Institut, University of Zurich, Zürich (Switzerland):
Artificial spin chains on superconductor surfaces
- 28.11.2019: J. Wiebe,
Festkörperphysikalisches Kolloquium, Max-Planck-Institut für chemische Physik fester Stoffe, Dresden (Deutschland):
Investigation of spin order and superconductivity in thin-film iron-based superconductors on topological insulators
- 2.5.2018: J. Wiebe,
Seminar of the Peter Grünberg Institute (PGI) und Institute for Advanced Simulation (IAS), Forschungszentrum Jülich, Jülich (Deutschland):
Emulation of Spin Systems via Artificial Arrays of Magnetic Atoms
- 17.1.2018: J. Wiebe,
Seminar at the Center for Hybrid Nanostructures (CHyN), Hamburg University, Hamburg (Germany):
Atomic Scale Magnetic Imaging and Spectroscopy: from Artificial Arrays of Magnetic Atoms to Iron Based Superconductors
- 18.4.2017: J. Wiebe,
Festkörperphysik-Seminar, Institut für Theoretische Physik, Universität Bremen, Bremen (Germany):
Coexistence of magnetism and superconductivity in iron-based superconductors on the atomic scale
- 15.2.2017: J. Wiebe,
Seminar at the Nanoscale Science Department of the Max Planck Institute for Solid State Research, Stuttgart (Germany):
Coexistence of magnetism and superconductivity in iron-based superconductors on the atomic scale
- 23.1.2017: J. Wiebe,
Physikalisches Kolloquium der Ruhr-Universität Bochum, Bochum (Germany):
Coexistence of Magnetism and Superconductivity in Iron-Based Superconductors on the Atomic Scale
- 8.10.2016: J. Wiebe,
Hamburger Tag der Nanotechnologie, Hamburg (Germany):
Informationstechnologie von Morgen: Logische Gatter aus elf Atomen

- 7.11.2015: J. Wiebe,
6. Nacht des Wissens, Hamburg (Germany):
Informationstechnologie von Morgen: Logische Gatter aus elf Atomen
- 18.9.2015: J. Wiebe,
Neueröffnung der Ausstellung „Nanotechnologie - Aufbruch in neue Welten“, Hamburg (Germany):
Informationstechnologie von Morgen: Logische Gatter aus elf Atomen
- 3.12.2013: J. Wiebe,
Seminar des GrK 1621, Dresden (Germany):
Spin-resolved and inelastic scanning tunneling spectroscopy of nanostructures built atom by atom
- 10.5.2011: J. Wiebe,
Seminar at the Uppsala University UniMolecular Electronics Center, Uppsala (Sweden):
Spin Excitation and Magnetometry of Artificial Nanostructures Built Atom by Atom.
- 24.11.2010: J. Wiebe,
Seminar in Solid State Physics, Physik Institut, Universität Zürich, Zürich (Germany):
Magnetic Imaging and Excitation of Nanostructures Built from Individual Atoms.
- 8.3.2010: J. Wiebe,
Seminar Kondensierte Materie, Gruppe Prof. Dr. M. Morgenstern, II. Physikalisches Institut B, RWTH Aachen, Aachen (Germany):
Probing the spin-state of individual quantum magnets embedded in a semiconductor.
- 25.10.2008: J. Wiebe,
Symposium der Forschergruppe *Coherence and relaxation properties of electron spins*, Dresden (Germany):
Probing single-atom magnetization curves: A method to detect low-energy magnetic interaction in nanostructures.
- 25.6.2008: J. Wiebe,
Nanoscale Science Department Seminar Max-Planck-Institute for Solid State Research, Stuttgart (Germany):
Probing single-atom magnetization curves: A method to detect magnetic interactions in nanostructures.
- 7.3.2008: J. Wiebe,
Nanotechnology Seminar, Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg (USA):
Revealing Magnetic Interactions From Single-Atom Magnetization Curves.
- 8.2.2008: J. Wiebe,
Seminar in the Photonics and Semiconductor Nanophysics group at the Eindhoven University of Technology, Eindhoven (The Netherlands):
Low-temperature scanning tunneling spectroscopy on individual Mn acceptors in InAs.

- 7.2.2008: J. Wiebe,
Seminar in the Photonics and Semiconductor Nanophysics group at the Eindhoven University of Technology, Eindhoven (The Netherlands):
Subkelvin spin polarized STM: measuring magnetization curves of individual adatoms.
- 2.11.2007: J. Wiebe,
Materials Science Seminar at the University of New Hampshire, Durham, New Hampshire (USA):
Imaging the magnetization of individual atoms.
- 13.2.2006: J. Wiebe, F. Meier, K. Hashimoto, M. Morgenstern, J.-M. Tang, M. E. Flatté, and R. Wiesendanger,
II Physikalisches Institut B, Rheinisch-Westfälische Technische Hochschule Aachen, Aachen (Germany):
Scanning Tunneling Spectroscopy of Individual Mn Acceptors in InAs.
- 20.1.2006: J. Wiebe, F. Meier, K. Hashimoto, A. Wachowiak, D. Haude, T. Foster, M. Morgenstern, J.-M. Tang, M. E. Flatté, and R. Wiesendanger,
Leibniz Institute for Solid State and Materials Research Dresden, Dresden (Germany):
Towards Spin-Resolved Imaging of Single Magnetic Defects Using a 300mK-Scanning Tunneling Microscope.

Contributed talks at international conferences

- 18.3.2024: K. Ton That, C. Xu, I. Ioannidis, L. Schneider, T. Posske, D. K. Morr, R. Wiesendanger, and J. Wiebe,
87. Jahrestagung der DPG und DPG-Frühjahrstagung der Sektion Kondensierte Materie (SKM 2024), Berlin (Germany):
Non-local detection of Yu-Shiba-Rusinov states in quantum corrals
- 8.9.2022: Lucas Schneider, Philip Beck, Thore Posske, Levente Rózsa, J. Wiebe, and Roland Wiesendanger,
DPG-Tagung der Sektion Kondensierte Materie (SKM 2022), Regensburg (Germany):
Low-energy end states in proximitized antiferromagnetic nanowires
- 28.9.2021: J. Wiebe,
84. Annual DPG Meeting of the Condensed Matter Section (SKM 2021), virtual (Germany):
Evidence for p-wave pairing and precursors of Majorana modes in artificial Shiba chains
- 9.9.2019: J. Wiebe,
Concluding workshop of the Priority Program "Topological Insulators: Materials - Fundamental Properties - Devices" (SPP 1666), Berlin (Germany):
Investigation of spin order and superconductivity in thin-film iron-based superconductors on topological insulators
- 19.6.2019: J. Wiebe, L. Schneider, M. Steinbrecher, L. Rózsa, T. Posske, and R. Wiesendanger,

8th International Conference on Scanning Probe Spectroscopy (SPS'19), Hamburg (Germany):

Yu-Shiba-Rusinov bands of artificial spin chains on high-Z superconductors

- 16.3.2018: L. Cornils, A. Kamlapure, L. Zhou, S. Pradhan, A. A. Khajetoorians, J. Fransson, J. Wiebe, and R. Wiesendanger,
DPG-Frühjahrstagung und EPS-CMD27, Berlin (Germany):
Spin-Resolved Spectroscopy of the Yu-Shiba-Rusinov States of Individual Atoms
- 18.3.2016: J. Wiebe, A. A. Khajetoorians, M. Steinbrecher, M. Ternes, M. Bouhassoune, M. Dos Santos Dias, S. Lounis, and R. Wiesendanger,
APS March Meeting, Baltimore, Maryland (USA):
Tailoring the chiral magnetic interaction between two individual atoms
- 16.3.2015: A. A. Khajetoorians, M. Steinbrecher, M. Bouhassoune, M. dos Santos Dias, S. Lounis, M. Ternes, J. Wiebe, and R. Wiesendanger,
79th Spring Conference, Deutsche Physikalische Gesellschaft, Berlin (Germany):
Conduction-electron mediated Dzyaloshinskii-Moriya interactions between adatoms revealed by ISTS
- 18.9.2014: J. Wiebe,
Sandbjerg Meeting, Sandbjerg (Denmark):
Introduction to Spin-Resolved Scanning Tunneling Spectroscopy
- 24.7.2014: J. Wiebe, A. A. Khajetoorians, M. Steinbrecher, T. Schlenk, M. Valentyuk, A. Lichtenstein, and R. Wiesendanger,
International Conference on Nanoscience and Technology, Keystone, Colorado (USA):
Tuning Competition Between Magnetic Anisotropy and Kondo Screening in Individual Adatoms by Controlled Hydrogenation
- 11.9.2013: J. Wiebe, A. A. Khajetoorians, T. Schlenk, M. Steinbrecher, B. Schweglinghaus, M. dos Santos Dias, M. Bouhassoune, S. Lounis, and R. Wiesendanger,
International Conference on Nanoscience and Technology ICN+T, Paris (France):
Magnetism of Fe on Pt(111) Revisited by Inelastic Scanning Tunneling Spectroscopy
- 12.3.2013: J. Wiebe, T. Schlenk, A. A. Khajetoorians, and R. Wiesendanger,
77th Spring Conference, Deutsche Physikalische Gesellschaft, Regensburg (Germany):
Magnetism of Fe on Pt(111) Revisited by Inelastic Scanning Tunneling Spectroscopy
- 3.8.2012: J. Wiebe, J. Honolka, A. A. Khajetoorians, V. Sessi, T. O. Wehling, S. Stepanow, J.-L. Mi, B. B. Iversen, T. Schlenk, N. Brookes, A. I. Lichtenstein, Ph. Hofmann, K. Kern, and R. Wiesendanger,
31st International Conference on the Physics of Semiconductors (ICPS 2012), Zürich (Switzerland):
In-Plane Magnetic Anisotropy of Fe Atoms on Bi₂Se₃(111).
- 29.03.2012: J. Wiebe, A. A. Khajetoorians, S. Lounis, A. T. Costa, B. Chilian, D. L. Mills, and R. Wiesendanger,
76th Spring Conference, Deutsche Physikalische Gesellschaft, Berlin (Germany):
Anomalously large g-factor of single atoms adsorbed on a metal substrate.

- 1.3.2012: J. Wiebe, A. A. Khajetoorians, B. Chilian, R. Wiesendanger, S. Lounis, A. T. Costa, and D. L. Mills,
2012 APS March Meeting, Boston, Massachusetts (USA):
Anomalously large g -factor of single atoms adsorbed on a metal substrate.
- 16.03.2011: J. Wiebe, A. A. Khajetoorians, S. Lounis, B. Chilian, A. T. Costa, L. Zhou, D. Mills, S. Schuwalow, F. Lechermann, and R. Wiesendanger,
75th Spring Conference, Deutsche Physikalische Gesellschaft, Dresden (Germany):
Itinerant Nature of Atom-Magnetization Excitation by Inelastic Scanning Tunneling Spectroscopy.
- 04.06.2009: J. Wiebe,
International Symposium on Quantum Materials, Hamburg (Germany):
Low-Temperature Scanning Tunneling Spectroscopy on Individual Magnetic Dopants in III/V Semiconductors.
- 23.3.2009: J. Wiebe, L. Zhou, S. Lounis, E. Y. Vedmedenko, F. Meier, P. H. Dederichs, S. Blügel, and R. Wiesendanger,
73rd Spring Conference, Deutsche Physikalische Gesellschaft, Dresden (Germany):
Oscillatory indirect exchange in adatom pairs and triplets.
- 6.11.2007: J. Wiebe, F. Meier, L. Zhou, and R. Wiesendanger,
52nd Magnetism and Magnetic Materials Conference, Tampa, Florida (USA):
Magnetization Curves from Individual Magnetic Adatoms.
- 28.3.2006: J. Wiebe, F. Meier, K. Hashimoto, G. Bihlmayer, S. Blügel, P. Ferriani, S. Heinze, and R. Wiesendanger,
70th Spring Conference, Deutsche Physikalische Gesellschaft, Dresden (Germany):
Unoccupied Surface State on Pt(111) Revealed By Scanning Tunneling Spectroscopy.
- 5.7.2005: J. Wiebe, L. Sacharow, A. Wachowiak, S. Heinze, M. Morgenstern, G. Bihlmayer, S. Blügel, and R. Wiesendanger,
13th International Conference on STM, Sapporo (Japan):
The Spectroscopic Signature of Stacking Faults and Dislocation Lines on Co(0001).

- 11.3.2004: J. Wiebe, L. Sacharow, A. Wachowiak, M. Morgenstern, and R. Wiesendanger,
68th Spring Conference, Deutsche Physikalische Gesellschaft, Regensburg (Germany):
Spectroscopic Signature of Stacking Faults and Dislocation Lines on Co(0001).
- 23.7.2003: J. Wiebe, Chr. Meyer, J. Klijn, M. Morgenstern, and R. Wiesendanger,
12th International Conference on STM, Eindhoven (The Netherlands):
From Quantized States to Percolation: Scanning tunneling spectroscopy of a strongly disordered two-dimensional electron system.
- 12.12.2000: J. Wiebe, M. Morgenstern, A. Wachowiak, D. Haude, and R. Wiesendanger,
1st International Workshop on Nano-scale Spectroscopy and its Applications to Semiconductor Research, Trieste (Italy):
An Ultra High Vacuum-300mK-Scanning Tunneling Microscope for Local Measurements of the Density of States on InAs(110).

Poster contributions at international conferences

- 29.6.2017: J. Wiebe, K. von Bergmann, and R. Wiesendanger,
SFB 668 International Symposium, Hamburg (Germany):
A1: Magnetische Spektroskopie einzelner Atome, Ketten und Nanostrukturen
- 9.7.2014: J. Wiebe, P. Löptien, L. Zhou, A. A. Khajetoorians, J. L. Mi, B. B. Iversen, Ph. Hofmann, and R. Wiesendanger,
New Trends in Topological Insulators (NTTI) 2014, Berlin (Germany):
Screening and Atomic-Scale Engineering of the Potential at a Topological Insulator Surface
- 2.4.2014: A. A. Khajetoorians, T. Schlenk, M. Steinbrecher, M. Valentyuk, B. Schweflinghaus, M. dos Santos Dias, M. Bouhassoune, S. Lounis, A. Lichtenstein, J. Wiebe, and R. Wiesendanger,
78th Spring Conference, Deutsche Physikalische Gesellschaft, Dresden (Germany):
Manipulating the magnetic properties of a single atom by controlled hydrogenation
- 8.10.2013: J. Wiebe, P. Löptien, L. Zhou, A. A. Khajetoorians, J.-L. Mi, B. B. Iversen, Ph. Hofmann, and R. Wiesendanger,
Kickoff meeting of DFG-SPP 1666, Frankfurt (Germany):
Screening and Atomic-Scale Engineering of the Potential at a Topological Insulator Surface
- 29.3.2010: J. Wiebe, A. A. Khajetoorians, B. Chilian, S. Schuwalow, F. Lechermann, and R. Wiesendanger,
International workshop on single dopant control, Lorentz Center, Leiden (The Netherlands):
Magnetization Curves and Excitation Spectra of Individual Spins on Semiconducting Substrates.

- 3.7.2007: J. Wiebe, F. Meier, L. Zhou, K. von Bergmann, P. Ferriani, K. Hashimoto, M. Bode, S. Heinze, and R. Wiesendanger, International Conference on Nanoscience and Technology, Stockholm (Sweden): *Spin-Resolved Scanning Tunneling Spectroscopy on Individual Adatoms: Cobalt on Platinum(111)*.
- 26.7.2006: J. Wiebe, F. Marczinowski, F. Meier, K. Hashimoto, R. Wiesendanger, M. Morgenstern, J.-M. Tang, and M. E. Flatté, 4th International Conference on Scanning Probe Spectroscopy (SPS06) and 1st International Workshop on Spin-Polarized Scanning Tunneling Microscopy (SPSTM-1), Hamburg (Germany): *Scanning Tunneling Spectroscopy on Individual Mn-Acceptors in InAs*.
- 23.9.2004: J. Wiebe, Chr. Meyer, J. Klijn, M. Morgenstern, and R. Wiesendanger, International Symposium on Quantum Hall Systems and Quantum Materials, Hamburg (Germany): *The transition from quantized states to percolation in a strongly disordered two-dimensional electron system investigated by scanning tunneling spectroscopy*.
- 16.2.2004: J. Wiebe, Chr. Meyer, J. Klijn, M. Morgenstern, and R. Wiesendanger, 13th International Winterschool on New Developments in Solid State Physics, Mauterndorf (Austria): *From Quantized States to Percolation: Scanning Tunneling Spectroscopy of a Strongly Disordered Two-dimensional Electron System*.
- 27.6.2003: J. Wiebe, Chr. Meyer, J. Klijn, M. Morgenstern, and R. Wiesendanger, Center of Excellence for Low Dimensional Structures, Warsaw (Poland): *From Quantized States to Percolation: Scanning tunneling spectroscopy of a strongly disordered two-dimensional electron system*.
- 11.3.2002: J. Wiebe, M. Morgenstern, A. Wachowiak, M. Getzlaff, J. Klijn, L. Plucinski, R. L. Johnson, and R. Wiesendanger, 66th Spring Conference, Deutsche Physikalische Gesellschaft, Regensburg (Germany): *Co-p-InAs(110): Ein durch Co-Inseln induziertes zweidimensionales Elektronensystem bestehend aus Elektronenpfützen*.