

Curriculum Vitae -- Prof. Dr. Reinhold Kleiner

Date of Birth: 16.05.1962

Address:

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Research Area and Direction

Experimental physics, solid state physics, superconductivity and magnetism, Josephson effects and quantum interferometry, nonlinear dynamics, imaging techniques at low temperatures, hybrid quantum systems

Education

1988 Diploma in Physics at the Technical University of Munich
Grade: 1.0
1992 PhD at the Technical University of Munich
Title: „*Intrinsic Josephson Effects in $Bi_2Sr_2CaCu_2O_{8+x}$* “
Grade: summa cum laude
1997 Habilitation at the University of Erlangen-Nürnberg
Title: „*Tunnel Experiments on the Symmetry of the Superconducting Order Parameter in High Temperature Superconductors*“

Work Experience

1992 – 1993 Research fellow at the Walther Meissner Institute, Garching
1994 – 1995 Research fellow of the DFG at the University of California, Berkeley, CA, U.S.A.
1996 – 1998 Research assistant (C1) at the University of Erlangen-Nürnberg
1998 – 1999 Research assistant (C2) at the University of Erlangen-Nürnberg
since 2000 Full professor (C4) at the University of Tübingen

Awards, Honors

1997 Rudolf-Kaiser Prize of the Stifterverband für die Deutsche Wissenschaft
2008 ERC Advanced Grant "Socathes"

Further activities

Member of Deutsche Physikalische Gesellschaft, American Physical Society
Member, different commissions of the Faculty of Science (presently Research Commission, PhD and Habilitation Commission), Eberhard Karls Universität Tübingen, DE)
Vice Dean of the Faculty for Physics (2002)
Vice Dean of the Faculty for Mathematics and Physics (2002 - 2004)
Co-Director of Physikalisches Institut 2000-2004
Director of Physikalisches Institut 04/2005 - 04/2007
Member of steering committee of Transregional research centre TR21
Member of Center of Collective Quantum Phenomena (CQ)
Chair of Division Low Temperature Physics of the German Physics Society (2015-2018)
Co-Chair of Division Low Temperature Physics of the German Physics Society (2018-2021)
2018 – 2025 Member of DPG Award Committee Gustav Hertz Preis
Since 2020 Member of Advisory Board Rudolf-Kaiser-Stiftung

Research Stays

1994 – 1995 Research fellow of the DFG at University of California, Berkeley, CA, U.S.A.

Selected publications:

Total number of publications in peer-reviewed journals: ~ 285, 1 book, 8 chapters in books
Citations (Web of Science, November 2021): >8900, h - index: 44

1. *Superconductivity – Basics and Applications*
W. Buckel, R. Kleiner, Wiley-VCH, 3. English edition (2015), 7. German edition (2012).
2. *Intrinsic Josephson Effects in $\text{Bi}_2\text{CaSr}_2\text{Cu}_2\text{O}_8$ Single Crystals*
R. Kleiner, F. Steinmeyer, G. Kunkel, P. Müller, Physical Review Letters **68**, 2394 (1992).
3. *Intrinsic Josephson effects in high- T_c - superconductors*
R. Kleiner and P. Müller, Physical Review B **49**, 1327 (1994).
4. *High-transition temperature superconducting quantum interference devices*
D. Koelle, R. Kleiner, F. Ludwig, E. Dantsker, J. Clarke, Reviews of Modern Physics **71**, 631 (1999).
5. *Dynamic behaviour of Josephson-coupled layered structures*
R. Kleiner, P. Müller, H. Kohlstedt, N.F. Pedersen, S. Sakai, Physical Review B **50**, 3942 (1994).
6. *Hot Spots and Waves in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$ Intrinsic Josephson Junction Stacks - a Study by Low Temperature Scanning Laser Microscopy*
H. B. Wang, S. Guénon, J. Yuan, A. Iishi, S. Arisawa, T. Hatano, T. Yamashita, D. Koelle, R. Kleiner, Physical Review Letters **102**, 017006 (2009).
7. *Coherent terahertz emission of intrinsic Josephson junction stacks in the hot spot regime*
H. B. Wang, S. Guénon, B. Gross, J. Yuan, Z. G. Jiang, Y. Y. Zhong, M. Grünzweig, A. Iishi, P. H. Wu, T. Hatano, D. Koelle, R. Kleiner, Physical Review Letters **105**, 057002 (2010).
8. *$0-\pi$ Josephson Tunnel Junctions with Ferromagnetic Barrier*
M. Weides, M. Kemmler, H. Kohlstedt, R. Waser, D. Koelle, R. Kleiner, E. Goldobin, Physical Review Letters **97**, 247001 (2006).
9. *Manipulation and coherence of ultra-cold atoms on a superconducting atom-chip*
S. Bernon, H. Hattermann, D. Bothner, M. Knufinke, P. Weiss, F. Jessen, D. Cano, M. Kemmler, R. Kleiner, D. Koelle, J. Fortágh, Nature Commun. **4**, 2380 (2013)
10. *Superconducting emitters of THz radiation*
U. Welp, K. Kadowaki, R. Kleiner, Nature Photonics **7**, 702710 (2013).
11. *Experimental evidence of a φ Josephson junction*
H. Sickinger, A. Lipman, M. Weides, R. G. Mints, H. Kohlstedt, D. Koelle, R. Kleiner, E. Goldobin, Physical Review Letters **109**, 107002 (2012).
12. *Coupling ultracold atoms to a superconducting coplanar waveguide resonator*
H. Hattermann, D. Bothner, L. Y. Ley, B. Ferdinand, D. Wiedmaier, L. Sarkani, R. Kleiner, D. Koelle, J. Fortágh, Nature Communications **8**, 2254 (2017).
13. *SQUID-based detection of ultra-low-field multinuclear NMR of substances hyperpolarized using signal amplification by reversible exchange*
K. Buckenmaier, M. Rudolph, C. Back, T. Misztal, U. Bommerich, P. Fehling, D. Koelle, R. Kleiner, H. A. Mayer, K. Scheffler, J. Bernarding, M. Plaumann, Scientific Reports **7**, 13431 (2017).
14. *Terahertz Emission from $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ intrinsic Josephson junction stacks*
R. Kleiner, H. B. Wang, J. Appl. Phys. **126**, 171101 (2019)