

CURRICULUM VITAE

MARTINO POGGIO

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ResearcherID: [B-5821-2008](https://orcid.org/B-5821-2008)



Background

Birth 05 Mar. 1978 in Tübingen, Germany
Citizenship Italy, USA (dual)
Languages English (native), Italian (native), Portuguese, German

Education

10 Dec. 2005 Ph.D. in Physics, University of California, Santa Barbara
11 Dec. 2003 M.A. in Physics, University of California, Santa Barbara
08 Jun. 2000 B.A. *magna cum laude* in Physics, Harvard University
08 Jun. 1996 Diploma *summa cum laude*, Roxbury Latin, West Roxbury, MA, USA

Experience

Jan. 2014 - Present Associate Professor of Physics (tenured), University of Basel
Jan. 2009 - Dec. 2013 Assistant Professor of Physics (tenure track), University of Basel
Jan. 2006 - Dec. 2008 Post-doctoral Researcher, IBM Almaden / Stanford (manager: Dr. Dan Rugar)
Sep. 2000 - Dec. 2005 Graduate Researcher, UC Santa Barbara (advisor: Prof. David Awschalom)

Selected Awards and Honors

2013 European Research Council (ERC) Starting Grant
2010 Cozzarelli Prize for outstanding PNAS paper
2006 - 2008 Stanford Center for Probing the Nanoscale (CPN) Post-doctoral Fellowship
2000, 2001 UCSB Parsons Graduate Fellowship for outstanding graduate students
2000 UCSB Condensed Matter Graduate Fellowship
1998, 2000 Harvard College Scholarship for academic performance
1997, 1999 John Harvard Scholarship for academic performance
1996 Valedictorian of the Roxbury Latin School

Peer-reviewed Publications

- 2018 46. *Imaging stray magnetic field of individual ferromagnetic nanotubes*
D. Vasyukov, L. Ceccarelli, M. Wyss, B. Gross, A. Schwarb, A. Mehlin, N. Rossi, G. Tütüncüoğlu, F. Heimbach, R. R. Zamani, A. Kovács, A. Fontcuberta i Morral, D. Grundler, and M. Poggio
[Nano Lett.](#), Article ASAP.
- 2017 45. *Electric field sensing with a scanning fiber-coupled quantum dot*
D. Cadeddu, M. Munsch, N. Rossi, J. Claudon, J.-M. Gérard, R. J. Warburton, and M. Poggio
[Phys. Rev. Appl.](#) **8**, 031002 (2017).
44. *Imaging magnetic vortex configurations in ferromagnetic nanotubes*
M. Wyss, A. Mehlin, B. Gross, A. Buchter, A. Farhan, M. Buzzi, A. Kleibert, G. Tütüncüoğlu, F. Heimbach, A. Fontcuberta i Morral, D. Grundler, and M. Poggio
[Phys. Rev. B](#) **96**, 024423 (2017).

43. *Resonant driving of a single photon emitter embedded in a mechanical resonator*
M. Munsch, A. Kuhlmann, D. Cadeddu, J.-M. Gérard, J. Claudon, M. Poggio, and R. J. Warburton
Nat. Commun. **8**, 76 (2017).
Related articles: *Uni News*, 14 July 2017.
42. *Vectorial scanning force microscopy using a nanowire sensor*
N. Rossi, F. R. Braakman, D. Cadeddu, D. Vasyukov, G. Tütüncüoğlu, A. Fontcuberta i Morral, and M. Poggio
Nat. Nanotechnol. **12**, 150 (2017).
Related articles: *Uni News*, 17 October 2016; *Neue Zürcher Zeitung*, 18 October 2016; *Physics* **9**, 124 (2016); *APS News* **25** (10), November 2016.
- 2016
41. *Role of the electron spin in determining the coherence of the nuclear spins in a quantum dot*
G. Wüst, M. Munsch, F. Maier, A. V. Kuhlmann, A. Ludwig, A. D. Wieck, D. Loss, M. Poggio, and R. J. Warburton
Nat. Nanotechnol. **11**, 885 (2016).
Related article: *Uni News*, 11 July 2016.
40. *Dynamic cantilever magnetometry of individual CoFeB nanotubes*
B. Gross, D. P. Weber, D. Ruffer, A. Buchter, F. Heimbach, A. Fontcuberta i Morral, D. Grundler, and M. Poggio
Phys. Rev. B **93**, 064409 (2016).
39. *Time-resolved nonlinear coupling between orthogonal flexural modes of a pristine GaAs nanowire*
D. Cadeddu, F. R. Braakman, G. Tütüncüoğlu, F. Matteini, D. Ruffer, A. Fontcuberta i Morral, and M. Poggio
Nano Lett. **16**, 926 (2016).
38. *A fiber-coupled quantum-dot on a photonic tip*
D. Cadeddu, J. Teissier, F. R. Braakman, J. M. Gérard, J. Claudon, R. J. Warburton, M. Poggio, and M. Munsch
Appl. Phys. Lett. **108**, 011112 (2016).
- 2015
37. *Magnetization reversal of an individual exchange-biased permalloy nanotube*
A. Buchter, R. Wölbing, M. Wyss, O. F. Kieler, T. Weimann, J. Kohlmann, A. B. Zorin, D. Ruffer, F. Matteini, G. Tütüncüoğlu, F. Heimbach, A. Kleibert, A. Fontcuberta i Morral, D. Grundler, R. Kleiner, D. Koelle, and M. Poggio
Phys. Rev. B **92**, 214432 (2015).
36. *Permanent reduction of dissipation in nanomechanical Si resonators by chemical surface protection*
Y. Tao, P. Navaretti, R. Hauert, U. Grob, M. Poggio, and C. L. Degen
Nanotechnology **26**, 465501 (2015).
35. *Stabilized skyrmion phase in MnSi nanowires detected by dynamic cantilever magnetometry*
A. Mehlin, F. Xue, D. Liang, H. Du, M. J. Stolt, S. Jin, M. Tian, and M. Poggio
Nano Lett. **15**, 4839 (2015).
- 2014
34. *Nonlinear motion and mechanical mixing in as-grown GaAs nanowires*
F. R. Braakman, D. Cadeddu, G. Tütüncüoğlu, F. Matteini, D. Ruffer, A. Fontcuberta i Morral, and M. Poggio
Appl. Phys. Lett. **105**, 173111 (2014).

33. *Manipulation of the nuclear spin ensemble in a quantum dot with chirped magnetic resonance pulses*
M. Munsch, G. Wüst, A. Kuhlmann, F. Xue, A. Ludwig, D. Reuter, A. D. Wieck, M. Poggio, and R. J. Warburton
[Nat. Nanotechnol. **9**, 671 \(2014\).](#)
Related article: [Uni News](#), 16 September 2014.
32. *Quantum dot opto-mechanics in a fully self-assembled nanowire*
M. Montinaro, G. Wüst, M. Munsch, Y. Fontana, E. Russo-Averchi, M. Heiss, A. Fontcuberta i Morral, R. J. Warburton, and M. Poggio
[Nano Lett. **14**, 4454 \(2014\).](#)
31. *Boundary between the thermal and statistical polarization regimes in a nuclear spin ensemble*
B. E. Herzog, D. Cadeddu, F. Xue, P. Peddibhotla, and M. Poggio
[Appl. Phys. Lett. **105**, 043112 \(2014\).](#)
30. *Vortex lattice melting of a NbSe₂ single grain probed by ultrasensitive cantilever magnetometry*
L. Bossoni, P. Carretta, and M. Poggio
[Appl. Phys. Lett. **104**, 182601 \(2014\).](#)
- 2013
29. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*
P. Peddibhotla, F. Xue, H. I. T. Hauge, S. Assali, E. P. A. M. Bakkers, and M. Poggio
[Nat. Phys. **9**, 631 \(2013\).](#)
Related article: [Uni News](#), 26 August 2013.
28. *Charge noise and spin noise in a semiconductor quantum device*
A. Kuhlmann, J. Houel, L. Greuter, A. Ludwig, A. D. Wieck, M. Poggio, and R. J. Warburton
[Nat. Phys. **9**, 570 \(2013\).](#)
Related articles: [Nat. Phys. **9**, 538 \(2013\)](#); [Uni News](#), 02 October 2013.
27. *Nanoscale multifunctional sensor formed by a Ni nanotube and a scanning Nb nanoSQUID*
J. Nagel, A. Buchter, F. Xue, O. F. Kieler, T. Weimann, J. Kohlmann, A. B. Zorin, D. Ruffer, E. Russo-Averchi, R. Huber, P. Berberich, A. Fontcuberta i Morral, D. Grundler, R. Kleiner, D. Koelle, M. Poggio, and M. Kemmler
[Phys. Rev. B **88**, 064425 \(2013\).](#)
26. *Reversal mechanism of an individual Ni nanotube simultaneously studied by torque and SQUID magnetometry*
A. Buchter, J. Nagel, D. Ruffer, F. Xue, D. P. Weber, O. F. Kieler, T. Weimann, J. Kohlmann, A. B. Zorin, E. Russo-Averchi, R. Huber, P. Berberich, A. Fontcuberta i Morral, M. Kemmler, R. Kleiner, D. Koelle, D. Grundler, and M. Poggio
[Phys. Rev. Lett. **111**, 067202 \(2013\).](#)
- 2012
25. *Cantilever magnetometry of individual Ni nanotubes*
D. P. Weber, D. Ruffer, A. Buchter, F. Xue, E. Russo-Averchi, R. Huber, P. Berberich, J. Arbiol, A. Fontcuberta i Morral, D. Grundler, and M. Poggio
[Nano Lett. **12**, 6139 \(2012\).](#)
24. *Feedback cooling of cantilever motion using a quantum point contact transducer*
M. Montinaro, A. Mehlin, H. S. Solanki, P. Peddibhotla, S. Mack, D. D. Awschalom, and M. Poggio
[Appl. Phys. Lett. **101**, 133104 \(2012\).](#)

23. *Probing single-charge fluctuations at a GaAs/AlAs interface using laser spectroscopy on a nearby InGaAs quantum dot*
J. Houel, A. V. Kuhlmann, L. Greuter, F. Xue, M. Poggio, B. D. Gerardot, P. A. Dalgarno, A. Badolato, P. M. Petroff, A. Ludwig, D. Reuter, A. D. Wieck, and R. J. Warburton
Phys. Rev. Lett. **108**, 107401 (2012).
- 2011
22. *Measurement of statistical nuclear spin polarization in a nanoscale GaAs sample*
Fei Xue, D. P. Weber, P. Peddibhotla, and M. Poggio
Phys. Rev. B **84**, 205328 (2011).
21. *A geometry for optimizing nanoscale magnetic resonance force microscopy*
Fei Xue, P. Peddibhotla, M. Montinaro, D. P. Weber, and M. Poggio
Appl. Phys. Lett. **98**, 163103 (2011).
- 2010
20. *Force-detected nuclear magnetic resonance: recent advances and future challenges*
M. Poggio and C. L. Degen
Nanotechnology **21**, 342001 (2010).
19. *Frequency domain multiplexing of force signals with application to magnetic resonance force microscopy*
T. H. Oosterkamp, M. Poggio, C. L. Degen, H. J. Mamin, and D. Rugar
Appl. Phys. Lett. **96**, 083107 (2010).
- 2009
18. *Isotope-selective detection and imaging of organic nanolayers*
H. J. Mamin, T. H. Oosterkamp, M. Poggio, C. L. Degen, C. T. Rettner, and D. Rugar
Nano Lett. **9**, 3020 (2009).
17. *Nuclear double resonance between statistical spin polarizations*
M. Poggio, H. J. Mamin, C. L. Degen, M. H. Sherwood, and D. Rugar
Phys. Rev. Lett. **102**, 087604 (2009).
Related article: *Physics* **16**, March 2009.
16. *Nanoscale magnetic resonance imaging*
C. L. Degen, M. Poggio, H. J. Mamin, C. T. Rettner, and D. Rugar
Proc. Natl. Acad. Sci. U.S.A. **106**, 1313 (2009).
Related articles: *Nature News*, 12 January 2009; *The New York Times*, 13 January 2009, p. D3; *Technology Review*, 13 January 2009; *The Stanford Report*, 28 January 2009; *Nat. Nanotechnol.* **4**, 76 (2009); *Proc. Natl. Acad. Sci. U.S.A.* **106**, 2477 (2009); *Nat. Methods* **6**, 192 (2009); *Nat. Biotechnol.* **27**, 254 (2009); *Nature* **458**, 844 (2009).
- 2008
15. *An off-board quantum point contact as a sensitive detector of cantilever motion*
M. Poggio, M. P. Jura, C. L. Degen, M. A. Topinka, H. J. Mamin, D. Goldhaber-Gordon, and D. Rugar
Nat. Phys. **4**, 635 (2008).
14. *Nuclear spin relaxation induced by a mechanical resonator*
C. L. Degen, M. Poggio, H. J. Mamin, and D. Rugar
Phys. Rev. Lett. **100**, 137607 (2008).
- 2007
13. *Role of spin noise in the detection of nanoscale ensembles of nuclear spins*
C. L. Degen, M. Poggio, H. J. Mamin, and D. Rugar
Phys. Rev. Lett. **99**, 250601 (2007).

12. *Feedback cooling of a cantilever's undamental mode below 5 mK*
M. Poggio, C. L. Degen, H. J. Mamin, and D. Rugar
[Phys. Rev. Lett. **99**, 017201 \(2007\).](#)
11. *Nuclear magnetic resonance force microscopy with a microwire rf source*
M. Poggio, C. L. Degen, C. T. Rettner, H. J. Mamin, and D. Rugar
[Appl. Phys. Lett. **90**, 263111 \(2007\).](#)
10. *Nuclear magnetic resonance imaging with 90-nm resolution*
 H. J. Mamin, M. Poggio, C. L. Degen, and D. Rugar
[Nat. Nanotechnol. **2**, 301 \(2007\).](#)
 Related articles: [Technology Review](#), 23 April 2007; [USA Today](#), 29 April 2007;
[Physics News Update](#), Number 824 #1 (2007); [Nat. Nanotechnol. **2**, 267 \(2007\);](#)
[Nature **450**, 1130 \(2007\).](#)
9. *Confinement engineering of s-d exchange interactions in Ga_{1-x}Mn_xAs/Al_yGa_{1-y}As quantum wells*
 N. P. Stern, R. C. Myers, M. Poggio, A. C. Gossard, and D. D. Awschalom
[Phys. Rev. B **75**, 045329 \(2007\).](#)
- 2005 8. *Structural, electrical, and magneto-optical characterization of paramagnetic GaMnAs quantum wells*
M. Poggio, R. C. Myers, N. P. Stern, A. C. Gossard, and D. D. Awschalom
[Phys. Rev. B **72**, 235313 \(2005\).](#)
7. *Spin dynamics in electrochemically charged CdSe quantum dots*
 N. P. Stern, M. Poggio, M. H. Bartl, E. L. Hu, G. D. Stucky, and D. D. Awschalom
[Phys. Rev. B **72**, 161303 \(2005\).](#)
6. *Antiferromagnetic s-d exchange coupling in GaMnAs*
 R. C. Myers, M. Poggio, N. P. Stern, A. C. Gossard, and D. D. Awschalom
[Phys. Rev. Lett. **95**, 017204 \(2005\).](#)
5. *High-field optically detected nuclear magnetic resonance in GaAs*
M. Poggio and D. D. Awschalom
[Appl. Phys. Lett. **86**, 182103 \(2005\).](#)
- 2004 4. *Spin transfer and coherence in coupled quantum wells*
M. Poggio, G. M. Steeves, R. C. Myers, N. P. Stern, A. C. Gossard, and D. D. Awschalom
[Phys. Rev. B **70**, 121305 \(2004\).](#)
- 2003 3. *Local manipulation of nuclear spin in a semiconductor quantum well*
M. Poggio, G. M. Steeves, R. C. Myers, Y. Kato, A. C. Gossard, and D. D. Awschalom
[Phys. Rev. Lett. **91**, 207602 \(2003\).](#)
 Related article: [Physics News Update](#), Number 622 #2 (2003).
- 2002 2. *Quantum information processing with large nuclear spins in GaAs semiconductors*
 M. N. Leuenberger, D. Loss, M. Poggio, and D. D. Awschalom
[Phys. Rev. Lett. **89**, 207601 \(2002\).](#)
- 2001 1. *Spin coherence and dephasing in GaN*
 B. Beschoten, E. Johnston-Halperin, D. K. Young, M. Poggio, J. E. Grimaldi, S. Keller, S. P. DenBaars, U. K. Mishra, E. L. Hu, and D. D. Awschalom
[Phys. Rev. B **63**, 121202 \(2001\).](#)

News & Opinion

- 2013 2. *Sensing from the bottom up*
M. Poggio
Nat. Nanotechnol. **8**, 482 (2013).
- 2004 1. *Francis Harry Compton Crick*
 T. Poggio and M. Poggio
Phys. Today **57** (11), 80 (2004).

Book Chapters

- 2018 3. *Force-detected Nuclear Magnetic Resonance*
M. Poggio and B. E. Herzog
Micro and Nano Scale NMR: Technologies and Systems, J. Anders and J. Korvink,
 Eds., Wiley (2018), in press; [arXiv:1702.06566](https://arxiv.org/abs/1702.06566).
- 2014 2. *Hybrid Mechanical Systems*
 P. Treutlein, C. Genes, K. Hammerer, M. Poggio, P. Rabl
Cavity Optomechanics, M. Aspelmeyer, T. Kippenberg, F. Marquardt, Eds.,
 Springer (2014), pp. 327-351.
- 2012 1. *Magnetic Resonance Force Microscopy*
M. Poggio and C. L. Degen
Encyclopedia of Nanotechnology, B. Bhushan, Ed., Springer-Verlag (2012).

Conference Proceedings

- 2006 1. *Nuclear and ion spins in semiconductor nanostructures*
M. Poggio, R. C. Myers, G. M. Steeves, N. P. Stern, A. C. Gossard, and
 D. D. Awschalom
Physica E **35**, 264 (2006).

Other Publications

- 2018 4. Force-detected nuclear magnetic resonance
M. Poggio
De Physicus; in press.
- 2010 3. *Taking MRI to the nanoscale by force*
M. Poggio
nanotechweb.org, 26 August 2010.
- 2005 2. *Spin Interactions Between Conduction Electrons and Local Moments in
 Semiconductor Quantum Wells*
M. Poggio
Ph.D. Thesis in Physics.
- 1994 1. *Cooperative physics of fly swarms: an emergent behavior*
M. Poggio and T. Poggio
M.I.T. A.I. Memo 1512 (1994).

Invited Talks at Conferences and Workshops

- Jul. 2018 49. *Magnetization configurations and reversal of individual ferromagnetic nanotubes*
 International Conference on Magnetism (ICM), San Francisco, USA

- May 2018 48. *Quantum sensing with nano-SQUIDs*
Quantum Systems and Technology, Monte Verità, Switzerland
- Feb. 2018 47. *Nanomechanics and nanomagnetism*
Spin mechanics 5 & Nano-MRI 6, École de Physique des Houches, Chamonix, France
- Feb. 2018 46. *Scanning probe microscopy with quantum sensors*
QSIT General Meeting, Arosa, Switzerland
- Jan. 2018 45. *Mechanical sensing of nanomagnetic systems*
XXII Swiss NMR Symposium, Zürich, Switzerland
- Dec. 2017 44. *Mechanical sensing of nanomagnetic systems*
Opto- and Nanomechanics Research Group (MecaQ) Annual Meeting, Paris, France
- Sep. 2017 43. *Mechanical sensing of nanomagnetic systems*
Foundations and Applications of Nanomechanics, Trieste, Italy
- Jul. 2017 42. *Magnetization configurations and reversal in ferromagnetic nanotubes*
13th International Workshop on Magnetism & Superconductivity at the Nanoscale, Tarragona, Spain
- Mar. 2017 41. *Force sensing with nanowires*
Trends in Nanoscience 2017, Kloster Irsee, Germany
- Feb. 2017 40. *Mechanical sensing of nanomagnetic systems*
Frontiers of Nanomechanical Systems, La Thuile, Italy
- Nov. 2016 39. *Vectorial scanning force microscopy using a nanowire sensor*
German-Japanese Workshop on Hybrid Quantum Systems, Berlin, Germany
- Jun. 2016 38. *Vectorial scanning force microscopy using a nanowire sensor*
Swiss Nano Convention, Basel, Switzerland
- Oct. 2015 37. *Sensing with multi-functional nanowires*
8th Nanowires Workshop (2015), Barcelona, Spain
- Sep. 2015 36. *Scanning nanowire sensors*
Swiss Nanoscience Institute Annual Meeting, Lenzerheide, Switzerland
- Aug. 2015 35. *Measuring nanometer-scale spin systems by ultrasensitive cantilever magnetometry*
The 8th International School and Conference on Spintronics and Quantum Information Technology (SpinTech VIII), University of Basel, Switzerland
- Jul. 2015 34. *Measuring nanometer-scale spin systems by ultrasensitive cantilever magnetometry*
5th NanoMRI Conference, Institute for Quantum Computing, Waterloo, Canada
- Jun. 2015 33. *Measuring nanometer-scale spin systems by ultrasensitive cantilever magnetometry*
Spin Mechanics 3, Munich, Germany
- Sep. 2014 32. *Coupling nanomechanics to solid-state spin*
School on nano-optomechanics, Strasbourg, France
- Sep. 2014 31. *Quantum dot opto-mechanics in a fully self-assembled nanowire*
Quantum Technologies Based on Hybrid Emitter/Solid-state Systems, Strasbourg, France

- Jun. 2014 30. *Cantilever magnetometry of individual ferromagnetic nanotubes*
International Seminar of Nanomechanical Systems (NEMS 2014), Paris, France
- Mar. 2014 29. Plenary Talk: *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*
55th Experimental Nuclear Magnetic Resonance Conference (ENC), Boston, USA
- Nov. 2013 28. *Nano-mechanics, nano-magnetometry, and nano-MRI*
544th Wilhelm und Else Heraeus-Seminar: Interactions with the Nanoworld: Local Probes with High Time, Energy and Force Resolution, Bad Honnef, Germany
- Oct. 2013 27. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*
Wide-bandgap Semiconductor Nanosstructures, Nice, France
- Jul. 2013 26. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*
Quantum Nano- and Micromechanics, Monte Verità, Switzerland
- Jul. 2013 25. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*
3rd Workshop on Nanoscale Spin and Charge Dynamics, Cluj, Romania
- May 2013 24. *Nano-mechanics, nano-magnetometry, and nano-MRI*
International Workshop on Magnetic Nanowires and Nanotubes 2013, Kaub, Germany
- Sep. 2012 23. Plenary Talk: *Recent progress in force-detected MRI*
Advanced Magnetic Resonance for the Study of Dynamics in Biomolecules and Materials, Halle, Germany
- Sep. 2011 22. *Recent progress in force-detected MRI*
Recent Advances in Broad-Band Solid-State NMR of Correlated Electronic Systems, Trogir, Croatia
- Jul. 2011 21. *Recent progress in force-detected MRI*
Magnetic Resonance Microsystems, Freiburg, Germany
- Feb. 2011 20. *Magnetic resonance imaging with nanomechanics*
Advanced Atomic Force Microscopy Techniques, Karlsruhe, Germany
- Oct. 2010 19. *Towards nano-MRI in mesoscopic transport systems*
Workshop on Quantum Spintronics, Maratea, Italy
- Jul. 2010 18. *Towards nano-MRI in mesoscopic transport systems*
3rd Nano-MRI Research Conference, Domaine du Tremblay, France
- Jun. 2010 17. Plenary Talk: *Magnetic resonance imaging with nanomechanics*
Annual Meeting of the Swiss Physical Society, Basel, Switzerland
- Feb. 2010 16. *Magnetic resonance imaging with nanomechanics*
Edgar Lüscher Seminar 2010: Neues aus der Festkörperphysik, Klosters, Switzerland
- Nov. 2009 15. *Magnetic resonance imaging with nanomechanics*
National School on the Physics of Matter: Physics of Spin in Materials, Chiavari, Italy
- Jul. 2009 14. *Ultra-sensitive force detection applied to magnetic resonance imaging*
International Workshop and School on Solid State Based Quantum Information Processing, Herrsching, Germany

- Jun. 2009 13. *Ultra-sensitive force detection applied to magnetic resonance imaging*
Spin and Charge Properties of Low Dimensional Systems, Sibiu, Romania
- Jun. 2009 12. *Ultra-sensitive force detection applied to magnetic resonance imaging*
Swiss Nano 2009, Basel, Switzerland
- Jan. 2009 11. *Nanomechanics in the quantum world*
Nanoscience in the Snow, Eigergletscher, Switzerland
- May 2008 10. *Ultrasensitive force detection applied to nuclear magnetic resonance*
The 3rd Advanced Materials Failure Analysis Workshop, Phoenix, USA
- Jul. 2007 9. *Nuclear magnetic resonance imaging with 90-nm resolution*
International Conference on Electronic Properties of Two-dimensional Systems and Modulated Semiconductor Structures, Genoa, Italy
- Mar. 2006 8. *Measurement of the s-d exchange coupling in GaMnAs quantum wells*
American Physical Society March Meeting, Baltimore, USA
- Feb. 2006 7. *Manipulation of nuclear and ion spins in semiconductor nanostructures*
14th International Winterschool on New Developments in Solid State Physics – Charges and spins in nanostructures: basics and devices, Mauterndorf, Austria
- Jul. 2005 6. *Local manipulation of nuclear spins in a semiconductor quantum well*
International Conference on Quantum Electronics 2005 and the Pacific Rim Conference on Lasers and Electro-Optics 2005 (IQEC/CLEO-PR 2005), Tokyo, Japan
- Jun. 2005 5. *Local manipulation of nuclear spins in semiconductor nanostructures*
Gordon Research Conference on Magnetic Resonance, New London, USA
- Oct. 2004 4. *Optoelectronic manipulation of spins in quantum wells: harnessing local magnetic interactions*
International Workshop sponsored by the Nanoscale Science and Engineering Center: Frontiers in Nanoscale Science and Technology, Harvard University, USA
- Mar. 2004 3. *Local manipulation of nuclear spin in a semiconductor quantum well*
American Physical Society March Meeting, Montreal, Canada
- Jan. 2004 2. *Local manipulation of nuclear spin in a semiconductor quantum well*
The 34th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, USA
- Jul. 2003 1. *Local manipulation of nuclear spin in a semiconductor quantum well*
International Conference on Magnetism, Rome, Italy

Invited Colloquia and Seminars

- May 2018 33. *Nanomechanics and nanomagnetism*
Condensed Matter Physics Seminar, EPF, Lausanne, Switzerland
- May 2018 32. *Mechanical sensing of nanomagnetic systems*
Seminar, Laboratory for Advanced Microscopies, University of Zaragoza, Spain
- Dec. 2017 31. *Mechanical sensing of nanomagnetic systems*
Physics Department Seminar, University of Augsburg, Germany

- Jun. 2017 30. *Nanomechanics and nanomagnetism*
Department Seminar, CNRS Grenoble, France
- Jun. 2017 29. *Nanomechanics and nanomagnetism*
Physics Department Colloquium, University of Ulm, Germany
- Dec. 2015 28. *Nanometer-scale magnetometry*
Seminar of Biomedical Magnetic Resonance, Institute for Biomedical Engineering,
ETH, Zürich, Switzerland
- Mar. 2015 27. *Nanometer-scale Magnetometry*
Seminar, Leibniz Institute for Solid State and Materials Research (IFW), Dresden,
Germany
- Feb. 2015 26. *Nanometer-scale Magnetometry*
Seminar of the 3. Physikalisches Institut, University of Stuttgart, Germany
- Dec. 2014 25. *Nanometer-scale Magnetometry*
Nanoscale Science Department Seminar, Max-Planck Institute for Solids State
Research, Stuttgart, Germany
- Apr. 2014 24. *Nano- and opto-mechanics of fully self-assembled nanowires*
Institute for Terahertz Science and Technology Seminar, University of California,
Santa Barbara, USA
- Jun. 2013 23. *Nano-mechanics, nano-magnetometry, and nano-MRI*
Seminar, Bruker BioSpin AG, Fällenden, Switzerland
- Jan. 2013 22. *Nano-mechanics, nano-magnetometry, and nano-MRI*
Physics Department Seminar, Leeds University, UK
- Oct. 2012 21. *Nano-mechanics, nano-magnetometry, and nano-MRI*
Quantum Nanoscience Seminar, Delft University of Technology, Netherlands
- Jul. 2012 20. *Nano-mechanics, nano-magnetometry, and nano-MRI*
Physics Department Colloquium, University of Stuttgart, Germany
- Jun. 2012 19. *Nano-mechanics, nano-magnetometry, and nano-MRI*
Physics Department Colloquium, Technical University of Dresden, Germany
- Apr. 2012 18. *Nano-mechanics, nano-magnetometry, and nano-MRI*
Physics Department Colloquium, University of Tübingen, Germany
- Jan. 2012 17. *Recent progress in force-detected MRI*
Atomic, Mesoscopic, and Optical Physics Seminar, University of Cambridge, UK
- Jul. 2011 16. *Recent progress in force-detected MRI*
Condensed Matter Seminar, Technical University, Munich, Germany
- May 2010 15. *Magnetic resonance imaging with nanomechanics*
The Zürich Physics Colloquium, ETH, Zürich, Switzerland
- May 2010 14. *Magnetic resonance imaging with nanomechanics*
Physics Department Seminar, University of Pavia, Italy
- Apr. 2009 13. *Ultra-sensitive force detection applied to magnetic resonance imaging*
Physics Department Seminar, University of Pisa, Italy

- Apr. 2009 12. *Ultra-sensitive force detection applied to magnetic resonance imaging*
Physics Department Seminar, University of Genoa, Italy
- Mar. 2009 11. *Ultra-sensitive force detection applied to magnetic resonance imaging*
Science & Technology Seminar, IBM Zürich Research Laboratory, Switzerland
- Mar. 2009 10. *Ultra-sensitive force detection applied to magnetic resonance imaging*
Physics Department Seminar, University of Geneva, Switzerland
- Mar. 2009 9. *Ultra-sensitive force detection applied to magnetic resonance imaging*
Physics Seminar, CNRS, Grenoble, France
- Feb. 2009 8. *Adventures in ultra-sensitive force detection*
Physics Department Colloquium, University of Basel, Switzerland
- Feb. 2009 7. *Adventures in ultra-sensitive force detection*
Solid State Physics Seminar, ETH, Zürich, Switzerland
- Mar. 2008 6. *Ultrasensitive force detection applied to nuclear magnetic resonance*
Physics Department Seminar, University of Basel, Switzerland
- Jan. 2008 5. *Ultrasensitive force detection applied to nuclear magnetic resonance*
Physics Department Seminar, University of Minnesota, Minneapolis, USA
- Nov. 2007 4. *Ultrasensitive force detection applied to nuclear magnetic resonance*
Physics Department Seminar, University of Pittsburgh, USA
- Oct. 2007 3. *Ultrasensitive force detection applied to nuclear magnetic resonance*
(with Dr. Christian Degen)
Colloquium, IBM Almaden Research Center, San Jose, USA
- Jul. 2007 2. *Ultrasensitive force detection applied to nuclear magnetic resonance*
Condensed Matter Seminar, Ludwig Maximilians University, Munich, Germany
- May 2004 1. *Manipulating nuclear spins in semiconductors: a future information storage technology?*
Materials Structures and Devices Focus Center Teleseminar Series, teleconference

Popular Talks

- Nov. 2017 4. *Nanotecnologia: come e perché*
TecDay, Liceo Cantonale di Lugano 1, Lugano, Switzerland
- Nov. 2015 3. *Nanotecnologia: come e perché*
TecDay, Liceo Cantonale di Lugano 2, Lugano, Switzerland
- Jan. 2013 2. *Magnetresonanztomographie auf den Nanometer genau*
Saturday Morning Physics, University of Basel, Switzerland
- Feb. 2012 1. *What is nanomechanics?*
The Physics of Everything: From Astrophysics to Biophysics to Nanoscience
In Dialogue Series, International School Basel, Reinach, Switzerland

Courses Taught

- Spring 2018 18. Physics II for Physicists (Bachelors-level, in English)
- Fall 2017 17. Physics I for Biologists (Bachelors-level, in English)
- Spring 2017 16. Fundamental Electronics (Masters-level, in English)

<i>Fall 2016</i>	15. Physics I for Biologists (Bachelors-level, in English)
<i>Spring 2016</i>	14. Fundamental Electronics (Masters-level, in English)
<i>Fall 2015</i>	13. Physik I für Studierende der Biologie (Bachelors-level, in German)
<i>Spring 2015</i>	12. Fundamental Electronics (Masters-level, in English)
<i>Fall 2014</i>	11. Physik I für Studierende der Biologie (Bachelors-level, in German)
<i>Spring 2014</i>	10. Fundamental Digital Electronics (Masters-level, in English)
<i>Fall 2013</i>	9. Fundamental Analog Electronics (Masters-level, in English)
<i>Spring 2013</i>	8. Fundamental Digital Electronics (Masters-level, in English)
<i>Fall 2012</i>	7. Fundamental Analog Electronics (Masters-level, in English)
<i>Spring 2012</i>	6. Introduction to Nanomechanics (Masters-level, in English)
<i>Fall 2011</i>	5. Fundamental Electronics (Masters-level, in English)
<i>Spring 2011</i>	4. Optics of Solid-state Nanostructures (Masters-level, in English)
<i>Fall 2010</i>	3. Introduction to Nanomechanics (Masters-level, in English)
<i>Spring 2010</i>	2. Optics of Solid-state Nanostructures (Masters-level, in English)
<i>Fall 2009</i>	1. Introduction to Nanomechanics (Masters-level, in English)

Post-doctoral Researchers Supervised

<i>2014 - Present</i>	5. Boris Groß
<i>2014 - 2018</i>	4. Denis Vasyukov
<i>2013 - Present</i>	3. Floris Braakman
<i>2011 - 2014</i>	2. Hari Shankar Solanki
<i>2009 - 2013</i>	1. Fei Xue

Ph.D. Students Supervised

<i>2018 - Present</i>	15. Hinrich Mattiat
<i>2018 - Present</i>	14. David Jaeger
<i>2017 - Present</i>	13. Giulio Romagnoli
<i>2017 - Present</i>	12. Simon Philipp
<i>2016 - Present</i>	11. Lorenzo Ceccarelli
<i>2016 - Present</i>	10. Thibaud Ruelle
<i>2014 - Present</i>	9. Nicola Rossi
<i>2014 - Present</i>	8. Marcus Wyss
<i>2013 - Present</i>	7. Davide Cadeddu
<i>2012 - 2017</i>	6. Benedikt Herzog
<i>2012 - 2017</i>	5. Andrea Mehlin
<i>2011 - 2015</i>	4. Arne Buchter
<i>2009 - 2014</i>	3. Dennis Weber
<i>2009 - 2014</i>	2. Michele Montinaro
<i>2009 - 2013</i>	1. Phani Peddibhotla

Masters Students Supervised

<i>2015 - 2016</i>	4. Alexander Schwarb
<i>2014 - 2015</i>	3. Kavian Davallou
<i>2011 - 2012</i>	2. Andrea Mehlin
<i>2011 - 2012</i>	1. Benedikt Herzog

Membership & Service

<i>2015 - Present</i>	Scientific Committee Member of NCCR Quantum Science and Technology (QSIT)
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- 2009 - Present* Grant reviewer: Swiss National Science Foundation, European Research Council, National Science Foundation (USA), Israel Science Foundation, Chilean National Commission for Scientific and Technological Research, Netherlands Organization for Scientific Research, and Natural Sciences and Engineering Research Council of Canada.
- 2005 - Present* Journal reviewer: Physical Review Letters, Physical Review A, Physical Review B, Physical Review Applied, Applied Physics Letters, Nature Physics, Nature Nanotechnology, Nature Photonics, Nature Communications, Nano Letters, Small, Nanotechnology, and New Journal of Physics.
- 2001 - Present* Member of the American Physical Society