CURRICULUM VITAE Daniel Loss March 2024

Department of Physics
University of Basel
Klingelbergstrasse 82
4056 Basel, Switzerland

Nationality: Swiss
Born: February 25, 1958, Winterthur (CH)
Marital status: Married, 2 children
daniel.loss@unibas.ch; quantumtheory.physik.unibas.ch

Positions

August 2020-2032:	Co-Director and founding member of National Center on Spin Qubits (NCCR SPIN), University of Basel & IBM Zurich.
May 2006-2022:	Co-Director of the Swiss Nanoscale Center SNI, University of Basel.
Since April 2005:	Director of the Center for Quantum Computing and Quantum Coherence (QC2), University of Basel.
1998-1999, 2004-2005, 2008-2010	Chairman, Department of Physics, University of Basel.
Since Oct. 1996:	Professor of Theoretical Physics (Ordinarius), University of Basel, Switzerland.
Sept. 1995 – Sept. 1996:	Associate Professor of Physics, Simon Fraser University, Vancouver, Canada.
Jan. 1993 – Aug. 1995:	Assistant Professor of Physics, Simon Fraser University, Vancouver, Canada.
Sept. 1991 – Jan. 1993:	Research Scientist, condensed matter theory division, IBM T. J. Watson Research Center, Yorktown Heights, USA.
Oct. 1989 – Sept. 1991:	Postdoctoral Research Fellow with Prof. A. J. Leggett (Nobel Laureate 2003) at the University of Illinois, Urbana, USA.
Dec. 1985 – Sept. 1989:	Postdoctoral Research Associate, University of Zürich.

Education

Aug. 1983 – Dec. 1985:	Ph. D. student and teaching assistant at the Univ. of Zürich. Dissertation in statistical mechanics; advisor: Prof. A. Thellung.
Oct. 1979 – July 1983:	Study of theoretical physics at the University of Zürich; received diploma with distinction. Diploma thesis in general relativity; advisor: Prof. N. Straumann.
Oct. 1977 – Oct. 1979:	Medical School (1. & 2. Propaedeuticum), University of Zürich, then transfer to physics.
August 1977:	Eidgenössische Matura, Typus A (Greek and Latin Classics) Gymnasium Rychenberg, Winterthur, CH.

Awards, Honors, and Citation Statistics

Swiss NSF Fellowship for Advanced Researchers (1989-1991); Swiss NSF Professorship (1992, declined).
Fellow, American Physical Society (2000). Fellow, Institute of Physics (UK, 2005).
Humboldt Research Prize (Germany, 2005).
Marcel Benoist Prize 2010 (most prestigious science prize of Switzerland).
Blaise Pascal Medal in Physics 2014, European Academy of Sciences.
King Faisal International Prize 2017 in Science (Physics).
External Scientific Member of the Max Planck Society at MPI Halle (2021).
Member of the European Academy of Sciences (2013).
Member of the German National Academy of Sciences Leopoldina (2014).
Simons Distinguished Visiting Scholar, KITP (2013). Outstanding Referee APS (2015).
ResearcherID: A-3721-2008; orcid.org/0000-0001-5176-3073; ca. 550 publications; Google Scholar: citations: 62555; h-index: 113; highest cited paper (Ref. 51): 9125; 500 invited talks.

Research Area: Quantum Theory of Condensed Matter (Solid State Physics)

Spin and charge effects in semiconducting and magnetic nanostructures; spin qubits, quantum dots, quantum gates, electron and hole semiconductors; decoherence; quantum computing; superconductivity; strongly interacting electrons, Luttinger liquids; nuclear spins and hyperfine interaction; topological quantum matter; Majorana and para-fermions, non-Abelian statistics; (F)QHE; driven Floquet systems; magnonics, skyrmions and skyrmion lattices, nanomagnets.

1. Publication List (Daniel Loss)

Google Scholar: citations 62555; h-index 113.

1. *Correction terms to the $\lambda^2 t$-limit of van Hove by the Liouville operator method. I. A general perturbation treatment.* D. Loss, Physica 139A (1986) 505-525.
2. *Correction terms to the $\lambda^2 t$-limit of van Hove by the Liouville operator method. II. Evaluation of the Kubo formula for the electrical conductivity.* D. Loss, Physica 139A (1986) 526-542.
3. *The electrical conductivity for inhomogeneous electric fields by the Liouville operator method.* D. Loss and A. Thellung. Physica 144A (1987) 17-28.
4. *A new microscopic evaluation method for correlation functions: long time tails.* D. Loss and H. Schoeller. Physica A150 (1988) 199-243.
5. *A new quantum-statistical evaluation method for time correlation functions.* D. Loss and H. Schoeller. J. Stat. Phys. 54 (1989) 765-795.
6. *Quantum-statistical kinetic equations.* D. Loss and H. Schoeller. J. Stat. Phys. 56 (1989) 175-201.
7. *Simplified virial expansions in the canonical ensemble.* D. Loss, H. Schoeller and A. Thellung. Physica A155 (1989) 373-384.
8. *Comparison between different Markov approximations for open spin systems.* M. Celio and D. Loss. Physica A158 (1989) 769-785.
9. *Quantum Boltzmann-Lorentz model approach to the line shape problem.* D. Loss, A. Thellung and T.A. Turski. Phys. Rev. A41 (1990) 3005-3015.

*10. *Linear quantum Enskog equation. I. Homogeneous quantum fluids.* D. Loss. J. Stat. Phys. 59 (1990) 691-723.

*11. *Linear quantum Enskog equation. II. Inhomogeneous quantum fluids.* D. Loss. J. Stat. Phys. 61(1990) 463-493.

12. *Hopping conductivity for localized electronic states-Liouville space formalism.* D. Loss and P. C. W. Holdsworth. Physica B 176 (1992) 319-326.
13. *Dephasing by a dynamic environment.* D. Loss and K. Mullen. Phys. Rev. B43 (1991) 13252-13261.
14. *The effect of dissipation on phase periodicity and the quantum dynamics of Josephson junctions.* D. Loss and K. Mullen. Phys. Rev. A43 (1991) 2129-2138.
15. *Commutation relations for periodic operators.* D. Loss and K. Mullen. J. Phys. A 25 (1992) L235-L239.

*16. *Berry's phase and persistent charge and spin currents in textured mesoscopic rings.* D. Loss, P. Goldbart and A. V. Balatsky. Phys. Rev. Lett. 65 (1990) 1655-1658.

17. *Second virial coefficient of an interacting anyon gas.* D. Loss and Y. Fu. Phys. Rev. Lett. 67(1991) 294-297.
18. *Period- and amplitude- halving in mesoscopic rings with spins.* D. Loss and P. Goldbart. Phys. Rev. B RC 43 (1991) 13762-13765.

*19. *Persistent Currents from Berry's phase in mesoscopic systems.* D. Loss and P. Goldbart. Phys. Rev. B 45 (1992) 13544-13559.

20. *Experimental consequences of persistent currents from Berry's phase.* D. Loss and P. Goldbart. Phys. Lett. A 215 (1996) 197-204.

*21. *Parity effects in a Luttinger Liquid: Dia- and paramagnetic ground states.* D. Loss. Phys. Rev. Lett. 69 (1992) 343-346.

*22. *Macroscopic quantum tunneling in antiferromagnetic ferritin particles.* D. Awschalom, J. Smyth, G. Grinstein, D. DiVincenzo, and D. Loss. Phys. Rev. Lett. 68 (1992) 3092-3095. Erratum: 71 (1993) 4279.

23. *Absence of spontaneous persistent current for interacting fermions in a one-dimensional mesoscopic ring.* D. Loss and T. Martin. Phys. Rev. B 47 (1993), 4619-4629.
24. *Resonant phenomena in compact and extended systems.* K. Mullen, D. Loss, and H. T. C. Stoof. Phys. Rev. B 47 (1993) 2689-2706.

*25. *Suppression of tunneling due to interference in spin sytems.* D. Loss, D. P. DiVincenzo, and G. Grinstein. Phys. Rev. Lett. 69 (1992) 3232-3234.

26. *Macroscopic quantum tunneling in magnetic proteins (Reply).* D. Awschalom, J. Smyth, G. Grinstein, D. DiVincenzo, and D. Loss. Phys. Rev. Lett. 70 (1993) 2199.

*27. *Weak localization effects and conductance fluctuations: implications of inhomogeneous magnetic fields.* D. Loss, H. Schoeller, and P. Goldbart. Phys. Rev. B 48 (1993) 15218-15236.

28. *Quantum tunneling and dissipation in nanometer-scale magnets.* D. Loss, D. DiVincenzo, G. Grinstein, D. Awschalom, and J. Smyth. Physica B 189 (1993) 189-203.
29. *Edge state transport and conductance fluctuations in the metallic phase of the quantum Hall effect.* D. Maslov and D. Loss. Phys.Rev.Lett. 71 (1993) 4222-4225.
30. *Comment on Have resonance experiments seen macroscopic quantum coherence in magnetic particles? The case from power absorption.* D. Awschalom, J. Smyth, G. Grinstein, D. DiVincenzo, and D. Loss. Phys. Rev. Lett. 71 (1993) 4276.
31. *Wentzel–Bardeen singularity and phase diagram for interacting electrons coupled to acoustic phonons in one dimension.*

D. Loss and T. Martin. Phys. Rev. B 50 (1994) 12160-12163.

32. *Onset of superconducting fluctuations for interacting fermions coupled to acoustic phonons in one dimension.* T. Martin and D. Loss. Int. J. Mod. Phys. B 9 (1995) 495-511.
33. *Quantum interference effects in inhomogeneous magnetic fields.*D. Loss, H. Schoeller, and P.M. Goldbart. Physica B 194-196 (1994) 1145-1146.
*34. *Spin stiffness of mesoscopic quantum antiferromagnets.* D. Loss and D. Maslov. Phys. Rev. Lett. 74 (1995) 178-181.
35. *Persistent currents and Luttinger liquids.* D. Loss and D. Maslov. In "Quantum Dynamics of Submicron Structures", edited by H.A. Cerdeira, B. Kramer and G. Schön, NATO ASI Series E, Vol.291 (Kluwer, Dordrecht, 1995), 199-210.
*36. *Bloch states of a Bloch wall.* H. B. Braun and D. Loss. J. Appl. Phys. 76 (1994) 6177-6179.
37. *Spin parity effects and macroscopic quantum coherence of Bloch walls.* H. B. Braun and D. Loss. In "Quantum Tunneling of the Magnetization-QTM '94", edited by B. Barbara and L. Gunther, NATO ASI Series E 301 (1995) 319-345.
38. *Quantum interference effects in inhomogeneous magnetic fields.* D. Loss, H. Schoeller, and P.M. Goldbart. Physica B 194-196 (1994).
39. *Dissipation and quantum propagation of Bloch walls.* H. B. Braun and D. Loss. Europhys. Lett. 31 (1995) 555-560.
40. *Quantization of Superflow Circulation and Magnetic Flux with a Tunable Offset.* Y. Lyanda-Geller, P.M. Goldbart, and D. Loss. Phys. Rev. B 53 (1996) 12395-12399.
*41. *Berry's phase and quantum dynamics of ferromagnetic solitons.* H.-B. Braun and D. Loss. Phys. Rev. B 53 (1996) 3237-3256.
42. *Andreev reflection and Josephson currents in Luttinger liquids.* D. L. Maslov, M. Stone, P.M. Goldbart, and D. Loss. Phys. Rev. B 53 (1996) 1548-1557.
43. *Chirality correlation of spin solitons: Bloch walls, spin-$\frac{1}{2}$ solitons and holes in a 2D antiferromagnetic background.* H.-B. Braun and D. Loss. Int. J. Mod. Phys. B 10 (1996) 219-234.
44. *Stability of the conventional fixed point of the non-linear σ-model in three dimensions.* T. Sun and D. Loss. Europhys. Lett. 34 (1996) 355-359.
45. *Chiral quantum spin solitons.* H.-B. Braun and D. Loss. J. Appl. Phys. 79 (1996) 6107-6109.
46. *MQC...Reply to Comments by Tejada and Garg.* S. Gider, D.D. Awschalom, D.P. DiVincenzo, and D. Loss. Science 272, April 19, 1996, 424.
47. *Macroscopic quantum tunneling of ferromagnetic domain walls.* H.-B. Braun, J. Kyriakidis, and D. Loss. Phys. Rev. B 56 (1997) 8129-8137. See cond-mat/9710064.
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*49. *Mesoscopic effects in the fractional quantum Hall regime: Chiral Luttinger liquid versus Fermi liquid.* M. R. Geller, D. Loss, and G. Kirczenow. Phys. Rev. Lett. 77 (1996) 5110-5113.
50. *Relationship between susceptibility and spin stiffness of mesoscopic quantum antiferromagnets.* A. Scott and D. Loss. Physica **A 239**, 47 (1997).
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53. *Quantum dynamics in mesoscopic magnetism.* D. Loss, in Dynamical Properties of Unconventional Magnetic Systems, A.T. Skjeltorp and D. Sherrington (eds.), NATO ASI Series E: Applied Sciences, Vol. 349, 1998 Kluwer Academic Publishers, p. 29-75.
*54. *Macroscopic quantum coherence in molecular magnets.* A. Chiolero and D. Loss. Phys. Rev. Lett. 80 (1998) 169-172.
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56. *Quantum spin dynamics in mesoscopic magnets.* A. Chiolero and D. Loss. Physica E 1 (1998) 292-296.
57. *Mesoscopic effects in the fractional quantum Hall effect.* M.R. Geller and D. Loss. Physica E 1 (1998) 120-123.
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*59. *Bloch oscillations of magnetic solitons in anisotropic spin-1/2 chains.* J. Kyriakidis and D. Loss. Phys. Rev. B **58** (1998) 5568-5583. See condmat/9803156.
*60. *Universality of shot noise in multiterminal diffusive conductors.* E. Sukhorukov and D. Loss. Phys. Rev. Lett. **80** (1998) 4959-4962 . See condmat/9802050.
61. *Observing the Berry phase in diffusive conductors: Necessary conditions for adiabaticity.* D. Loss, H. Schoeller, and P.M. Goldbart. Phys. Rev. B **59** (1999) 13328-13337. See condmat/9805128.
*62. *Coupled Quantum Dots as Quantum Gates.* G. Burkard, D. Loss, and D.P. DiVincenzo. Phys. Rev. B **59** (1999) 2070-2078. See condmat/9808026.
63. *Noise in Multiterminal Diffusive Conductors: Universality, Nonlocality and Exchange Effects.* E. Sukhorukov and D. Loss. Phys. Rev. B **59** 13054-13066 (1999). See cond-mat/9809239.
64. *Broken and Unbroken Symmetries in Low-Dimensional Quantum Magnets.* D. Loss, B. Normand, and J. Kyriakidis. Proceedings of the Zuoz Summer School on Hidden Symmetries and Higgs Phenomena, ed. D. Graudenz, PSI Proceedings

98-02, ISSN 1019-6447 (December 1998), pp. 225-231.

65. *Nonlinear sigma Model Treatment of Quantum Antiferromagnets in a Magnetic Field.* B. Normand, J. Kyriakidis, and D. Loss. Ann. Phys. (Leipzig) **9** (2000) 2, 133-159. See condmat/9902104.

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67. *Quantenphysik hat grossen praktischen Nutzen.* Ch. Bruder and D. Loss. Basler Zeitung, Nr. 242, 17./18. Oktober 1998.

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69. *Nobel Prizes 1998.* Ch. Bruder and D. Loss. Europhysics News, January/February 1999, p. 21.

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*71. *Thermally assisted Tunneling and Spin Relaxation in Mn_{12}-acetate.* M. Leuenberger and D. Loss. Phys. Rev. B **61** 1286-1302 (2000); see cond-mat/9907154.

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73. *Quantum Dot Electron Spin Manipulation using Cavity-QED.* A. Imamoglu, G. Burkard, D. Awschalom, D. DiVincenzo, D. Loss, M. Sherwin, and A. Small. Phys. Rev. Lett. **83**, 4204-4207 (1999); quant-ph/9904096.

*74. *Quantum Dynamics of Pseudospin Solitons in Double-Layer Quantum Hall Systems.* J. Kyriakidis, D. Loss, and A. MacDonald. Phys. Rev. Lett. **83** 1411-1414 (1999). Erratum, Phys. Rev. Lett. **85** 2222 (2000). See condmat/9904185.

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76. *Physical Optimization of Quantum Error Correction Circuits.* G. Burkard, D. Loss, D. P. DiVincenzo, and J. A. Smolin. Phys. Rev. B **60**, 11404-11416 (1999); see cond-mat/9905230.

*77. *Noise of Entangled Electrons: Bunching and Antibunching.* G. Burkard, D. Loss, and E. Sukhorukov. Phys. Rev. B **61**, R16303-R16307 (2000). See cond-mat/9906071.

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79. *Incoherent Zener Tunneling and its Application to Molecular Magnets.* M. N. Leuenberger and D. Loss. Phys. Rev. B **61**, 12200-12203 (2000). See cond-mat/9911065.

80. *Quantum Computation and Spin Electronics* D. P. DiVincenzo, G. Burkard, D. Loss, and E. Sukhorukov, in *Quantum Mesoscopic Phenomena and Mesoscopic Devices in Microelectronics*, eds. I. O. Kulik and R. Ellialtoglu (NATO ASI), p. 399-428, 2000, Kluwer, Netherlands; cond-mat/9911245.

81. *Transport and Noise of Entangled Electrons.* E. V. Sukhorukov, D. Loss, and G. Burkard, Statistical and Dynamical Aspects of Mesoscopic Systems, pp. 105-113, eds. D. Reguera, G. Platero, L.L Bonilla, J.M. Rubi, Lecture Notes in Physics Lectures Notes in Physics, Springer, Berlin Heidelberg 2000.

*82. *Spin-Dependent Josephson Current through Double Quantum Dots and Measurement of Entangled Electron States.* Mahn-Soo Choi, C. Bruder, and D. Loss. Phys. Rev. B **62**, 13569 (2000); cond-mat/0001011.

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84. *Electron Spins in Quantum Dots as Quantum Bits.* D. Loss, G. Burkard, and D. P. DiVincenzo. Journal of Nanoparticle Research, JNR **2**, 401-411 (2000).

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*87. *Quantum Dot as Spin Filter and Spin Memory.* P. Recher, E. V. Sukhorukov, and D. Loss. Phys. Rev. Lett. **85**, 1962-1965 (2000); cond-mat/0003089. see also Editor's Choice: Highlights of the recent literature, Science **289**, Number 5485, Issue of 8 September 2000.

88. *Spintronics and Quantum Dots for Quantum Computing and Quantum Communication.* G. Burkard, H.-A. Engel, and D. Loss. Fortschr. Phys. **48**, 9-11, 965-986 (2000). Special Issue on *Experimental Proposals for Quantum Computation*, eds. S. L. Braunstein and H.-K. Lo; cond-mat/0004182.

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91. *Spin Relaxation in Mn12-acetate.* M.N. Leuenberger and D. Loss. Reply, Europhys. Lett. **52** 247-258 (2000); cond-mat/0006149.
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*98. *Detection of Single Spin Decoherence in a Quantum Dot via Charge Currents.* H.-A. Engel and D. Loss. Phys. Rev. Lett. **86**, 4648 (2001); cond-mat/0011193.
99. *Superconductors, Quantum Dots, and Spin Entanglement.* Mahn-Soo Choi, C. Bruder, and D. Loss, Proceedings of *236. WE-Heraeus-Seminar: Interacting Electrons in Nanostructures*, Lecture Notes in Physics, Vol. 579, eds. R. Haug and H. Schoeller, Berlin, 2001, pp. 46-66.
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494. *Insulating regime of an underdamped current-biased Josephson junction supporting Z3 and Z4 parafermions.* Aleksandr E. Svetogorov, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 103, L180505 (2021); arXiv:2012.09062.
495. *Yu-Shiba-Rusinov States and Ordering of Magnetic Impurities Near the Boundary of a Superconducting Nanowire.* Oindrila Deb, Silas Hoffman, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 103, 165403 (2021); arXiv:2012.15205.
496. *Fractional boundary charges with quantized slopes in interacting one- and two-dimensional systems.* Katharina Laubscher, Clara S. Weber, Dante M. Kennes, Mikhail Pletyukhov, Herbert Schoeller, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 104, 035432 (2021); arXiv:2101.10301.
497. *Majorana Bound States Induced by Antiferromagnetic Skyrmion Textures.* Sebastin A. Daz, Jelena Klinovaja, Daniel Loss, and Silas Hoffman, Phys. Rev. B 104, 214501 (2021); arXiv:2102.03423.
498. *Majorana bound states in topological insulators without a vortex.* Henry F. Legg, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 104, 165405 (2021); arXiv:2103.13412.
499. *Tuning interactions between spins in a superconductor.* Hao Ding, Yuwen Hu, Mallika T. Randeria, Silas Hoffman, Oindrila Deb, Jelena Klinovaja, Daniel Loss, and Ali Yazdani, Proc. Natl. Acad. Sci. (PNAS) 118, e2024837118 (2021); arXiv:2103.14656.
500. *Local and non-local quantum transport due to Andreev bound states in finite Rashba nanowires with superconducting and normal sections.* Richard Hess, Henry F. Legg, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 104, 075405 (2021) (Editors' Suggestion); arXiv:2105.02791.
501. *Squeezed hole spin qubits in Ge quantum dots with ultrafast gates at low power.* Stefano Bosco, Monica Benito, Christoph Adelsberger, and Daniel Loss, Phys. Rev. B 104, 115425 (2021); arXiv:2103.16724.
502. *Fully tunable hyperfine interactions of hole spin qubits in Si and Ge quantum dots.* Stefano Bosco and Daniel Loss, Phys. Rev. Lett. 127, 190501 (2021); arXiv:2106.13744.
503. *Review of performance metrics of spin qubits in gated semiconducting nanostructures.* Peter Stano and Daniel Loss, Nat Rev Phys 4, 672 (2022); arXiv:2107.06485.
504. *Helical Liquids in Semiconductors.* Chen-Hsuan Hsu, Peter Stano, Jelena Klinovaja, and Daniel Loss, Semicond. Sci. Technol. 36, 123003 (2021); arXiv:2107.13553.
505. *Laser-controlled real- and reciprocal-space topology in multiferroic insulators.* Tomoki Hirosawa, Jelena Klinovaja, Daniel Loss, and Sebastian A. Diaz, Phys. Rev. Lett. 128, 037201 (2022); arXiv:2108.06535.
506. *Isotropic and Anisotropic g-factor Corrections in GaAs Quantum Dots.* Leon C. Camenzind, Simon Svab, Peter Stano, Liuqi Yu, Jeramy D. Zimmerman, Arthur C. Gossard, Daniel Loss, and Dominik M. Zumbhl Phys. Rev. Lett. 127,

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507. *Giant magnetochiral anisotropy from quantum confined surface states of topological insulator nanowires.* Henry F. Legg, Matthias Rler, Felix Mnning, Dingxun Fan, Oliver Breunig, Andrea Bliesener, Gertjan Lippertz, Anjana Uday, A. A. Taskin, Daniel Loss, Jelena Klinovaja, and Yoichi Ando, Nature Nanotechnology 17, 696 (2022); arXiv:2109.05188.
508. *Fractional spin excitations and conductance in the spiral staircase Heisenberg ladder.* Flavio Ronetti, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 105, 134413 (2022); arXiv:2110.02130.
509. *Hole Spin Qubits in Ge Nanowire Quantum Dots: Interplay of Orbital Magnetic Field, Strain, and Growth Direction.* Christoph Adelsberger, Mnica Benito, Stefano Bosco, Jelena Klinovaja, and Daniel Loss, Phys. Rev. B 105, 075308 (2022); arXiv:2110.15039.
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511. *Non-Majorana zero energy modes in diluted spin chains proximitized to a superconductor.* Felix Kster, Sascha Brinker, Richard Hess, Daniel Loss, Stuart Parkin, Jelena Klinovaja, Samir Lounis, and Paolo Sessi, PNAS 2022 Vol. 119 No. 42 e2210589119; arXiv:2112.05708.
512. *Metallization and proximity superconductivity in topological insulator nanowires.* Henry F. Legg, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 105, 155413 (2022); arXiv:2201.02918.
513. *Charge-noise induced dephasing in silicon hole-spin qubits.* Ognjen Malkoc, Peter Stano, and D. Loss, Phys. Rev. Lett. 129, 247701 (2022); arXiv:2201.06181.
514. *Instability of the ferromagnetic quantum critical point in strongly interacting 2D and 3D electron gases with arbitrary spin-orbit splitting.* Dmitry Miserev, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 106, 134417 (2022); arXiv:2201.10995.
515. *Quantum-Coherent Nanoscience.* Andreas J. Heinrich, William D. Oliver, Lieven Vandersypen, Arzhang Ardavan, Roberta Sessoli, Daniel Loss, Ania Bleszynski Jayich, Joaquin Fernandez-Rossier, Arne Laucht, and Andrea Morello, Nature Nanotechnology 16, 1318 (2021); arXiv:2202.01431.
516. *Magnetoelectric Cavity Magnonics in Skyrmion Crystals.* Tomoki Hirosawa, Alexander Mook, Jelena Klinovaja, and Daniel Loss, PRX Quantum 3, 040321 (2022); arXiv:2203.03241.
517. *Crossed Andreev reflection in spin-polarized chiral edge states due to Meissner effect.* Tams Haidekker Galambos, Flavio Ronetti, Bence Hetnyi, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 106, 075410 (2022); arXiv:2203.05894.
518. *RKKY interaction at helical edges of topological superconductors.* Katharina Laubscher, Dmitry Miserev, Vardan Kaladzhyan, Daniel Loss, and Jelena Klinovaja, arXiv:2203.08137.
519. *Topological Hybrids of Magnons and Magnon Bound Pairs.* Alexander Mook, Rhea Hoyer, Jelena Klinovaja, and Daniel Loss, arXiv:2203.12374.
520. *Fully tunable longitudinal spin-photon interactions in Si and Ge quantum dots.* Stefano Bosco, Pasquale Scarlino, Jelena Klinovaja, and Daniel Loss, Phys. Rev. Lett. 129, 066801 (2022); arXiv:2203.17163.
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522. *Observation of fractional spin textures in a Heusler material.* Jagannath Jena, Brge Gbel, Tomoki Hirosawa, Sebastian A. Diaz, Daniel Wolf, Taichi Hinokihara, Vivek Kumar, Ingrid Mertig, Claudia Felser, Axel Lubk, Daniel Loss, and Stuart S. P. Parkin, Nat Commun 13, 2348 (2022).
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524. *Anomalous zero-field splitting for hole spin qubits in Si and Ge quantum dots.* Bence Hetnyi, Stefano Bosco, and Daniel Loss, Phys. Rev. Lett. 129, 116805 (2022); arXiv:2205.02582.
525. *Bayesian estimation of correlation functions.* Angel Gutierrez-Rubio, Daniel Loss, and Peter Stano, Phys. Rev. Research 4, 043166 (2022); arXiv:2205.03611.
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530. *Enhanced orbital magnetic field effects in Ge hole nanowires.* Christoph Adelsberger, Stefano Bosco, Jelena Klinovaja, and Daniel Loss, Phys. Rev. B 106, 235408 (2022); arXiv:2207.12050.
531. *Noise-correlation spectrum for a pair of spin qubits in silicon.* J. Yoneda, J. S. Rojas-Arias, P. Stano, K. Takeda, A. Noiri, T. Nakajima, D. Loss, and S. Tarucha, Nature Physics 19, 1793 (2023); arXiv:2208.14150.
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533. *Trivial Andreev band mimicking topological bulk gap reopening in the non-local conductance of long Rashba nanowires.*

Richard Hess, Henry F. Legg, Daniel Loss, and Jelena Klinovaja, Phys. Rev. Lett. 130, 207001 (2023); Editor's Suggestion; arXiv:2210.03507; arXiv:2306.16853 (reply 1a); Phys. Rev. Lett. 132, 099602 (2024) (reply 1b); arXiv:2308.10669 (reply 2).

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535. *RKKY interaction in one-dimensional flat band lattices.* Katharina Laubscher, Clara S. Weber, Maximilian Hnenberger, Herbert Schoeller, Dante M. Kennes, Daniel Loss, and Jelena Klinovaja, Phys. Rev. B 108, 155429 (2023); arXiv:2210.10025.
536. *Second-order topology and supersymmetry in two-dimensional topological insulators.* Clara S. Weber, Mikhail Pletyukhov, Zhe Hou, Dante M. Kennes, Jelena Klinovaja, Daniel Loss, and Herbert Schoeller, Phys. Rev. B 107, 235402 (2023); arXiv:2212.01307.
537. *Two-qubit logic with anisotropic exchange in a fin field-effect transistor.* Simon Geyer, Bence Hetnyi, Stefano Bosco, Leon C. Camenzind, Rafael S. Eggli, Andreas Fuhrer, Daniel Loss, Richard J. Warburton, Dominik M. Zumbhl, and Andreas V. Kuhlmann, Nature Physics 2023; arXiv:2212.02308.
538. *Realization of a three-dimensional quantum Hall effect in a Zeeman-induced second order topological insulator on a torus.* Zhe Hou, Clara S. Weber, Dante M. Kennes, Daniel Loss, Herbert Schoeller, Jelena Klinovaja, and Mikhail Pletyukhov, Phys. Rev. B 107, 075437 (2023); arXiv:2212.09053.
539. *Domain wall qubits on magnetic racetracks.* Ji Zou, Stefano Bosco, Banabir Pal, Stuart S. P. Parkin, Jelena Klinovaja, and Daniel Loss, Phys. Rev. Research 5, 033166 (2023); arXiv:2212.12019.
540. *Enhancement of the Kondo effect in a quantum dot formed in a full-shell nanowire.* Aleksandr E. Svetogorov, Daniel Loss, Jelena Klinovaja, Phys. Rev. B 107, 134505 (2023); arXiv:2301.12442.
541. *Parity protected superconducting diode effect in topological Josephson junctions.* Henry F. Legg, Katharina Laubscher, Daniel Loss, Jelena Klinovaja, Phys. Rev. B 108, 214520 (2023); arXiv:2301.13740.
542. *Spatial noise correlations beyond nearest-neighbor in 28Si/SiGe spin qubits.* Juan S. Rojas-Arias, Akito Noiri, Peter Stano, Takashi Nakajima, Jun Yoneda, Kenta Takeda, Takashi Kobayashi, Amir Sammak, Giordano Scappucci, Daniel Loss, Seigo Tarucha, Phys. Rev. Applied 20, 054024 (2023); arXiv:2302.11717.
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544. *Phase driving hole spin qubits.* Stefano Bosco, Simon Geyer, Leon C. Camenzind, Rafael S. Eggli, Andreas Fuhrer, Richard J. Warburton, Dominik M. Zumbhl, J. Carlos Egues, Andreas V. Kuhlmann, Daniel Loss, Phys. Rev. Lett. 131, 197001 (2023); Editor's suggestion; arXiv:2303.03350.
545. *High-fidelity two-qubit gates of hybrid superconducting-semiconducting singlet-triplet qubits.* Maria Spethmann, Stefano Bosco, Andrea Hofmann, Jelena Klinovaja, Daniel Loss, Phys. Rev. B 109, 085303 (2024); arXiv:2304.05086.
546. *Dimensional reduction of the Luttinger-Ward functional for spin-degenerate D-dimensional electron gases.* D. Miserev, J. Klinovaja, D. Loss, Phys. Rev. B 108, 235116 (2023); arXiv:2303.16732.
547. *Cavity-induced charge transfer in periodic systems: length-gauge formalism.* Ekaterina Vlasiuk, Valerii K. Kozin, Jelena Klinovaja, Daniel Loss, Ivan V. Iorsh, Ilya V. Tokatly, Phys. Rev. B 108, 085410 (2023); arXiv:2304.11364.
548. *Majorana Bound States in Germanium Josephson Junctions via Phase Control.* Melina Luethi, Henry F. Legg, Katharina Laubscher, Daniel Loss, Jelena Klinovaja, Phys. Rev. B 108, 195406 (2023); arXiv:2304.12689.
549. *Microscopic analysis of proximity-induced superconductivity and metallization effects in superconductor-germanium hole nanowires.* Christoph Adelsberger, Henry F. Legg, Daniel Loss, Jelena Klinovaja, Phys. Rev. B 108, 155433 (2023); arXiv:2306.06944.
550. *Dynamical nuclear spin polarization in a quantum dot with an electron spin driven by electric dipole spin resonance.* Peter Stano, Takashi Nakajima, Akito Noiri, Seigo Tarucha, Daniel Loss, Phys. Rev. B 108, 155306 (2023); Editor's suggestion; arXiv:2306.11253.
551. *Dissipative Spin-wave Diode and Nonreciprocal Magnonic Amplifier.* Ji Zou, Stefano Bosco, Even Thingstad, Jelena Klinovaja, Daniel Loss, Phys. Rev. Lett. 132, 036701 (2024); arXiv:2306.15916.
552. *Reply to "Comment on 'Trivial Andreev Band Mimicking Topological Bulk Gap Reopening in the Nonlocal Conductance of Long Rashba Nanowires"'.* Richard Hess, Henry F. Legg, Daniel Loss, Jelena Klinovaja, arXiv:2306.16853 (reply 1a); Phys. Rev. Lett. 132, 099602 (2024) (reply 1b); arXiv:2308.10669 (reply 2).
553. *Spatially correlated classical and quantum noise in driven qubits.* Ji Zou, Stefano Bosco, Daniel Loss, arXiv:2308.03054.
554. *Josephson transistor from the superconducting diode effect in domain wall and skyrmion magnetic racetracks.* Richard Hess, Henry F. Legg, Daniel Loss, Jelena Klinovaja, Phys. Rev. B 108, 174516 (2023); arXiv:2308.04817.
555. *Valley-free silicon fins by shear strain.* Christoph Adelsberger, Stefano Bosco, Jelena Klinovaja, and Daniel Loss, arXiv:2308.13448.
556. *Spin susceptibility in interacting two-dimensional semiconductors and bilayer systems at first order: Kohn anomalies and spin density wave ordering.* Joel Hutchinson, Dmitry Miserev, Jelena Klinovaja, Daniel Loss, Phys. Rev. B 109, 075139 (2024); arXiv:2310.05555.
557. *Quantum phase transitions and cat states in cavity-coupled quantum dots.* Valerii K. Kozin, Dmitry Miserev, Daniel

Loss, Jelena Klinovaja, arXiv:2310.15167.

558. *Gate-tunable topological superconductivity in a supramolecular electron spin lattice.* Jung-Ching Liu, Chao Li, Richard Hess, Hongyan Chen, Carl Drechsel, Ping Zhou, Robert Hner, Ulrich Aschauer, Thilo Glatzel, Silvio Decurtins, Daniel Loss, Jelena Klinovaja, Shi-Xia Liu, Wulf Wulfhekel, Ernst Meyer, Remy Pawlak, arXiv:2310.18134.
559. *Strong hole-photon coupling in planar Ge: probing the charge degree and Wigner molecule states.* Franco De Palma, Fabian Oppliger, Wonjin Jang, Stefano Bosco, Marin Jank, Stefano Calcaterra, Georgios Katsaros, Giovanni Isella, Daniel Loss, Pasquale Scarlino, arXiv:2310.20661.
560. *High-fidelity spin qubit shuttling via large spin-orbit interaction.* Stefano Bosco, Ji Zou, Daniel Loss, arXiv:2311.15970.
561. *Microscopic Mechanism of Pair-Density-Wave Superconductivity.* Dmitry Miserev, Jelena Klinovaja, Daniel Loss, arXiv:2312.17208.
562. *A Qubit with Simultaneously Maximized Speed and Coherence.* Miguel J. Carballido, Simon Svab, Rafael S. Eggli, Taras Patlatiuk, Pierre Chevalier Kwon, Jonas Schuff, Rahel M. Kaiser, Leon C. Camenzind, Ang Li, Natalia Ares, Erik P.A.M Bakkers, Stefano Bosco, J. Carlos Egues, Daniel Loss, Dominik M. Zumbhl, arXiv:2402.07313.
563. *Fractional Spin Quantum Hall Effect in Weakly Coupled Spin Chain Arrays.* Even Thingstad, Pierre Fromholz, Flavio Ronetti, Daniel Loss, Jelena Klinovaja, arXiv:2402.10849.
564. *Magnonic phi-Josephson Junctions and Synchronized Precession.* Kouki Nakata, Ji Zou, Jelena Klinovaja, Daniel Loss, arXiv:2403.01625.

2. Conferences: Invited Talks and Contributions

1. *Dephasing by an asymmetric environment.* D. Loss and K. Mullen. *Granular Nanoelectronics*, eds. D. K. Ferry, J. R . Barker and C. Jacoboni, NATO ASI Series, Series B: Physics Vol. 251 (1991).
2. *Phase periodicity and dissipation in quantum dynamics.* D. Loss and K. Mullen. ibid.
3. *Persistent spin currents in nanostructures.* D. Loss, P. Goldbart and A. V. Balatsky. ibid.
4. *Berry's phase and persistent currents in mesoscopic rings.* D. Loss. Invited talk,*18th Midwest Solid State Theory Symposium, Northwestern University, USA, 1990.*
5. *Persistent Currents in Mesoscopic Rings and Berry's Phase.* D. Loss. Invited talk, APS-March Meeting 1992 in a Symposium on Berry's phase in Condensed Matter.
6. *Berry's phase in Condensed Matter.* D. Loss. Invited talk, Mesoscopic Workshop, Trondheim, Norway, June, 1992.
7. *Macroscopic Quantum Tunneling in Magnetic Nanostructures.* D. Loss. Invited talk, NATO Advanced Research Workshop on Few-Electron Nanostructures, Nordwijk aan zee, The Netherlands, September 1992.
8. *Macroscopic Quantum Tunneling in Magnetic Strutures.* D.Loss. Invited talk, Annual meeting of the Canadian Association of Physicists, Vancouver, June 1993.
9. *Magnetic Quantum Tunneling and the Topological Phase.*
   D.P. DiVincenzo and D. Loss.Invited talk, LT20, Eugene, OR, USA, August 1993.
10. *Wentzel–Bardeen singularity and phase diagram for interacting electrons coupled to acoustic phonons in one dimension.* T. Martin and D. Loss. Invited talk, CNLS workshop on Quantum Complexity in Mesoscopic Physics, Los Alamos, NM, USA, March 1994.
11. *Persistent Currents and Luttinger Liquids.* D. Loss. Invited talk, ICTP NATO Workshop on Submicron Quantum Dynamics, Trieste, Italy, June 13-18, 1994.
12. *Spin Parity Effects and Quantum Tunneling of Bloch Walls.* D. Loss. Invited talk, NATO ASI conference on Quantum Tunneling of the Magnetization, Grenoble, France, June 26-July 4, 1994.
13. *Macroscopic Quantum Phenomena in Mesoscopic Magnets.* D. Loss. Invited talk, Ecole Normale Superieur, Paris, France, June 19-24, 1994.
14. *Conductance Fluctuations in the Metallic Phase of the Quantum Hall Effect.* D.L. Maslov and D. Loss. Contributed talk, *The physics of Semiconductors*, proceedings of the 22nd International Conference on the Physics of Semiconductors, Vancouver, ed. D.J. Lockwood, World Scientific, 1994, Vol.II, 1003-1006.
15. *Spin Parity Effects in Magnetic Tunneling.* D. Loss. Invited talk, American Physical Society Meeting, March 1995, in a Symposium on Macroscopic Quantum Phenomena in Magnetic Systems, San Jose, USA, March 22, 1995.
16. *Mesoscopic Fluctuations in Quantum Antiferromagnetic Chains.* D. Loss. Invited talk, workshop on Quantum Phase Transitions, Telluride, CO, USA, July 16-29, 1995. I canceled.
17. *Mesoscopic Magnetism.* H.B. Braun and D. Loss. Invited talk, American Physical Society Meeting, March 1996, St. Louis, MO, USA, in a Focused Session on *Magnetic Nanostructures, Ultrathin Films and Surfaces.*
18. *Mesoscopic Effects in the Fractional Quantum Hall regime: Chiral Luttinger Liquid versus Fermi Liquid.* D. Loss. Invited talk, ECAMI Workshop on Nanostructures and Mesoscopic Systems, June 12-15, 1996, NRC, Ottawa.
19. *Chiral Luttinger Liquids in the Fractional Quantum Hall Regime.* M. Geller and D. Loss. Invited talk, workshop on Recent Developments in the Two-Dimensional Electron Gas, Scuola Normale Superiore, Pisa, Italy, June 24, 1996.
20. *Mesoscopic Effects in a Chiral Luttinger Liquid.* M. Geller and D. Loss. Invited talk, workshop on Transport in the Quantum Hall Fluid, Aspen Center for Physics, Aspen, USA, Aug. 15, 1996.
21. *Mesoscopic Effects in Magnetic Systems.* D. Loss. Invited talk, ESPRIT-Workshop and Euroconference on Strongly Correlated Electrons in Mesoscopic Structures,
    Torino, Italy, September 2-30, 1996.
22. *Chiral Luttinger Liquids in the Quantum Hall Fluid.* M. Geller and D. Loss. Invited talk, Fourteenth Northwest Condensed Matter Physics Meeting University of Washington Seattle, Washington, October 26, 1996.
23. *Tunneling in Magnetic Systems.* D. Loss. Invited talk, workshop on Tunneling in Complex Systems, Institute for Nuclear Theory, University of Washington, Seattle, USA, March 1-May 30, 1997.
24. *Mesoscopic Effects in the Fractional Quantum Hall Effect: Fermi Liquid versus Luttinger Liquid.* M. Geller and D. Loss. Invited talk, American Physical Society Meeting, March 1997, in a Symposium on Edge States in the Fractional Quantum Hall Regime, Kansas City, USA, March 17-21, 1997.
25. *Quantum Dynamics in Mesoscopic Magnetism.* D. Loss. Invited Lecturer, NATO ASI workshop on Dynamical Properties of Unconventional Magnetic Systems, Geilo, Norway, April 2-12, 1997.
26. *Macroscopic Quantum Coherence in Molecular Magnets.* D. Loss. Invited talk, Workshop on Novel Physics in Low-Dimensional Electron Systems at the Max-Planck Institut für Physik Komplexer Systeme, Dresden, Germany, July 28-Aug. 8, 1997.
27. *Mesoscopic Effects in Chiral Luttinger Liquids.* M. Geller and D. Loss. Invited talk, Workshop on Novel Physics in Low-Dimensional Electron Systems at the Max-Planck Institut fuer Physik Komplexer Systeme, Dresden, Germany, July 28-Aug. 8, 1997.
28. *Macroscopic Quantum Coherence in Magnetic Nanostructures.* D. Loss. Invited talk, 2nd Gordon Research Conference

on Magnetic Nanostructures, Ventura, California, USA, January 25-29, 1998.

29. *Universality of Shot Noise in Mesoscopic Diffusive Conductors.* E. Sukhorukov and D. Loss. Contributed talk Q32.1, 1998 March Meeting of the APS, Los Angeles, USA, March 18, 1998.
30. *Quantum Computing with Quantum Dots.* G. Burkard and D. Loss. Contributed talk W32.9, 1998 March Meeting Los Angeles, USA, March 16-20, 1998.
31. *Linear Magnetization Characteristics of Low-Dimensional Spin Systems.* B. Norman and D. Loss. Contributed talk, APS March Meeting, Los Angeles, USA, March 16-20, 1998.
32. *Magnetic Bloch Oscillations in Quantum Spin Chains.* J. Kyriakidis and D. Loss. Contributed talk, APS March Meeting, Los Angeles, USA, March 16-20, 1998.
33. *Mesoscopic Effects in Low-Dimensional Magnets.* D. Loss. Invited talk, MECO 23 (Middle European Cooperation in Statistical Physics), ICTP, Trieste, April 27-29, 1998.
34. *Quantum Computing with Quantum Dots.* D. Loss. Invited talk, Workshop on Semiconductor Nanostructures, Scuola Normale Superiore, Pisa, Italy, June 11-19, 1998.
35. *Universality of Shot Noise in Diffusive Metals.* E. Sukhorukov and D. Loss. Invited talk, Workshop on Semiconductor Nanostructures, Scuola Normale Superiore, Pisa, Italy, June 11-19, 1998.
36. *Quantum Computing with Quantum Dots.* D. Loss. Invited talk, Workshop on Quantum Computation and Mesoscopic Physics, Scuola Normale Superiore, Pisa, Italy, June 25-27, 1998.
37. *Quantum Computing with Quantum Dots.* G. Burkard and D. Loss. Invited talk, Sixth Workshop on Quantum Computation, Torino, June 29-July 18, 1998.
38. *Broken Symmetry in Condensed Matter Systems.* D. Loss. Invited talk, Summer School on Hidden Symmetries and Higgs Phenomena, Zuoz, Switzerland, August 16-22, 1998.
39. *Quantum Computing.* D. Loss. Invited talk, Summer School on Hidden Symmetries and Higgs Phenomena, Zuoz, Switzerland, August 16-22, 1998.
40. *Mesoscopic Magnetism.* D. Loss. Invited talk, Euroconference Magnetism Today, Evora, Portugal, October 4-9, 1998.
41. *Quantum Antiferromagnets in a Magnetic Field.* B. Normand and D. Loss. Invited talk (upgraded), Euroconference Magnetism Today, Evora, Portugal, October 4-9, 1998.
42. *Macroscopic Quantum Phenomena in Molecular Magnets.* D. Loss. Invited talk (key note speaker), European Science Foundation workshop on Molecular Clusters, Magnetism and Quantum Size Effects, Florence, Italy, November 28-December 1, 1998.
43. *Berry Phase Effects in Mesoscopic Transport.* D. Loss. Invited talk, workshop on From Mesoscopic to Microscopic Quantum Transport: New Trends in Theory and Experiment, November 26/27, 1998, at the Max-Planck-Institut fuer Physik komplexer Systeme, Dresden, Germany.
44. *Quantum Computing and Quantum Information in Nanostructures.* D. Loss. Invited Lecturer (4 hour course), TMR Summer School on Quantum Computation and Quantum Information Theory, July 11-24, 1999, Villa Gualino, Torino, Italy.
45. *Quantum Computing with Quantum Dots.* D. Loss. Invited talk, XVIIIth Moriond Workshop on Quantum Physics at the Mesoscopic Scale, January 23 -30, 1999, Les Arcs 1800, Savoie, France.
46. *Quantum Dots for Quantum Computing.* D. Loss. Invited talk, Symposium on Quantum Computing, Centennial APS March Meeting, Atlanta, Georgia, March 1999.
47. *Quantum Computing with Quantum Dots.* D. Loss. Invited talk, Frühjahrstagung der Schweizerischen Physikalischen Gesellschaft, February 26, 1999.
48. *Quantum Computation with Nanostructures, Requirements and Prospects.* D. Loss. Invited talk, CeNS Workshop, Nanoscience: Scientific, technological, and economic perspectives, Venice International University, April 19-23, 1999.
49. *Shot Noise and Transport in Mesoscopic Conductors.* E. Sukhorukov. Invited talk, XVIIIth Moriond Workshop on Quantum Physics at the Mesoscopic Scale, January 23 -30, 1999, Les Arcs 1800, Savoie, France.
50. *Broken and Unbroken Symmetries in Quantum Antiferromagnets.* D. Loss. Invited talk, Symposium on Spontaneous Symmetry Breaking, February 10, 1999, Erlangen, Germany.
51. *Quantum Communication as Transport Problem in Mesoscopic Systems.* D. Loss. Invited talk, Workshop on Mesoscopic Physics and Transport Phenomena, Monte Verita, Ascona, July 18-24, 1999.
52. *Quantum Dots and Spin Dynamics in Condensed-Matter* and *Theoretical Treatment of Quantum Decoherence.* D. Loss. Invited lecturer at SQuINT Retreat: Quantum Computing and Information, University of California, Santa Barbara, USA, August 2-5, 1999.
53. *Quantum Computation.* D. Loss. Invited Plenary Lecture, Swiss-US Nanoforum 1999, ETH Zürich, Switzerland, September 20-22, 1999.
54. *Spin Parity Effects in Molecular Magnets.* D. Loss. Invited talk at the Leiden workshop on Quantum Effects in Magnetic Systems, Lorentz Center of Leiden University, Netherlands, June 14- July 2, 1999.
55. *Quantum Computing and Quantum Communication with Electrons.* D. Loss. Invited talk, Workshop on The Physics of Quantum Dots for Quantum Computing, Naval Research Laboratory, Washington DC, 13-15 September, 1999.
56. *Quantum computation using Spin-States in Quantum Dots.* D. Loss. Invited talk, 2nd TMR workshop on QUANTUM

TRANSPORT IN THE FREQUENCY AND TIME DOMAINES, Dipartimento di Fisica, Universitá di Genova, Italy, October 1-4, 1999.

57. *Quantum Information Theory*, and *Quantum Computing and Quantum Communication with electronic Nanostructures.* D. Loss. Mini-course given to graduate students, , Denmark, Oct. 12-14, 1999.
58. *Quantum computing and quantum communication with electrons in nanostructures.* E. Sukhorukov. Invited talk, First Russian School on "Quantum Methods of Information Processing", Chernogolovka, Russia, Dec. 12-14, 1999.
59. *Quantum Computing and Spin-Electronics.* D. Loss. Invited talk, Spins in Semiconductors Workshop (DARPA), Santa Barbara, USA, Jan. 5-7, 2000.
60. *Quantum Computing and Quantum Communication with Electrons.* D. Loss. Invited talk, 11th Int. Workshop on New Developments in Solid State Physics, 21-25 February, 2000, Mauterndorf, Austria.
61. *Quantum Computing and Spintronics.* D. Loss. Invited talk, 18th General Conference of the CONDENSED MATTER DIVISION of the European Physical Society, Montreux, Switzerland, 13-17 March 2000.
62. *Mesoscopic Physics: Status and Future Trends.* D. Loss. Invited talk, Swiss Physical Society Meeting (jointly with the EPS), Montreux, Switzerland, March 2000.
63. *Quantum Computing and Spin-Electronics.* D. Loss. Invited talk, 236. WE-Heraeus-Seminar on Interacting Electrons in Nanostructures, Physikzentrum Bad Honnef, Bonn, Germany, 13-16 June 2000.
64. *Quantum computing in connection with the more traditional areas of MQC.* D. Loss. Invited talk, "Macroscopic Quantum Coherence and Computing" - MQC2 2000,
Naples, Italy, June 14-17, 2000.
65. *Quantum Computing with Electron Spins.* D. Loss. Invited talk, International Workshop on the Theory of Nanoscale Superconductors and Magnetics, Argonne, U.S.A., June 18-20, 2000.
66. *Spintronics and Quantum Information Processing.* D. Loss. Invited Lecturer, Les Houches Summer School 'Nanophysics and Nanoelectronics', June 25-30, 2000, Les Houches, France.
67. *Quantum Computing and Spin-Electronics.* D. Loss. Invited talk, conference on Spin effects in mesoscopic systems, Cortona (Tuscany, Italy), 26-30 June 2000.
68. *Quantum Computing and Spin-Electronics.* D. Loss. Invited talk, Symposium on Spinelectronics, MPI Halle, Germany, July 3-6,2000.
69. *Spintronics and Quantum Computing:" How to measure a single spin 1/2 (qubit) via charge currents.* D. Loss. Invited talk, INTERNATIONAL WORKSHOP ON SPINTRONICS AND QUANTUM COPMPUTING, September 12, 2000, Tokyo, Japan.
70. *Quantum Computing and Spin-Electronics in Semiconductors.* D. Loss. Invited talk, International Conference on the Physics and Application of Spin-Related Phenomena in Semiconductors (PASPS2000), Sendai, Japan, September 13-15, 2000.
71. *Quantum Information and Spin-Electronics.* D. Loss. Invited talk, Ascona, Switzerland, October 9- 13, 2000.
72. *Quantum computation with quantum dots.* D. Loss. Invited talk, MRS Fall Meeting, Semiconductor Spintronics: Physics, Materials and Applications, Boston, MA, USA, November 27-December 1, 2000.
73. *Quantum Information and Spintronics.* G. Burkard and D. Loss. Invited talk, 3rd TMR workshop on QUANTUM TRANSPORT IN THE FREQUENCY AND TIME DOMAINES, Hamburg, Germany, September 3-9, 2000.
74. *Quantum Computing and Spin-Electronics in Quantum-Confined Nanostructures.* D. Loss. Invited talk, US-CH-Nanoforum, December 14 and 15, 2000, Princeton, USA.
75. Minicourse on Spin-tunneling in Molecular Magnets. D. Loss. Invited lecturer, 1st TMR workshop on Nanomagnetism (NANOMOLMAG), November 16-18, 2000, Firenze, Italy.
76. Spintronics. D. Loss. Invited talk. Dreikoenigstreffen, Bad Honnef, Germany, January 3-6, 2001.
77. Spintronics and Quantum Computing. D. Loss. Invited talk. International Conference on Experimental Implementation on Quantum Computation, Sidney, Australia, January 16-19, 2001.
78. Spintronics and Quantum Computing in Nanostructures. D. Loss. Invited talk (full length). XXXVIth Rencontres de Moriond on Electronic Correlations: From meso- to nano-physics, Les Arcs 1800, Savoie, France, January 20-27, 2001.
79. Invited lecturer for a graduate course on Quantum Computing and Spintronics. D. Loss. 13. Chris Engelbrecht Summer School in Theoretical Physics on "Quantum Computing, Communication and Decoherence", Stellenbosch, South Africa, 24 January- 2 February, 2001.
80. Spintronics (Part I) and Quantum Computing (Part II). D. Loss. Invited Lecturer at KIAS Winter School on Many-Body Physics in Low Dimensional Systems, Korean Institute for Advanced Studies, Seoul, South Korea, 19-22 February, 2001.
81. Invited lecturer on Quantum Computing with Spins. D. Loss. NATO ASI workshop, "From Microscopic to Macroscopic Scales: Coherence and Large Deviations", Geilo, Norway, April, 2001.
82. Quantum Computation in Semiconductor Quantum Dots. D. Loss. Invited talk. Focus Topic 2.9.4 (Symposium), APS March Meeting 2001, March 12-16, 2001, Seattle, USA.
83. Quantum Dot as Spin Filter and Spin Memory [C25.010]. Contributed talk. P. Recher, E. Sukhorukov, D. Loss, APS March Meeting 2001, March 12, 2001, Seattle, USA.
84. Noise of a Quantum-Dot System in the Cotunneling Regime [L34.003]. Contributed talk. E. Sukhorukov, G. Burkard,

D. Loss, APS March Meeting 2001, March 13, 2001, Seattle, USA.

85. Noise of Entangled Electrons: Bunching and Antibunching [L34.001]. Contributed talk. G. Burkard, D. Loss, E. Sukhorukov, APS March Meeting 2001, March 13, 2001, Seattle, USA.
86. Andreev-Tunneling, Coulomb Blockade, and Resonant Transport of Non-Local Spin-Entangled Electrons [L34.006]. Contributed talk. P. Recher, E. Sukhorukov, D. Loss, APS March Meeting 2001, March 13, 2001, Seattle, USA.
87. Invited Lecturer on Spintronics and Quantum Computing and Quantum Information. D. Loss. International Scientific Meeting on Spintronics and Quantum Computation, Maui, Hawaii, USA, May 12-17, 2001.
88. *Spintronics and Quantum Information Processing.* D. Loss. Invited talk, Conference on Quantum Computing and Quantum Communication, September 21-23, 2001, Athens, GA, USA.
89. Invited participant at ITP Workshop on Quantum Computing, ITP Santa Barbara, July-December 2001.
90. Invited participant at the workshop on Nanophysics and Bioelectronics- a new Odyssey, at the Max Planck Institut for Complex Systems, Dresden, Germany, August 6 - 31, 2001.
91. *Spintronics and Quantum Computing.* Invited talk. D. Loss. International Conference "Quantum Computers and Quantum Chaos" Villa Olmo, Como, Italy at June 28 - 30, 2001.
92. *Spintronics and Quantum Computing.* Invited talk. D. Loss. Biannual Stig Lundqvist Research Conferences on The Advancing Frontiers of Condensed Matter Physics/ Science, Trieste, Italy, ICTP, July 2-6, 2001.
93. *Spintronics and Quantum Computing.* Invited talk. D. Loss. SPINTECH-I THE 1ST INTERNATIONAL CONFERENCE AND SCHOOL ON SPINTRONICS AND QUANTUM INFORMATION TECHNOLOGY May 13 - 18, 2001, Outrigger Wailea Hotel Maui, Hawaii.
94. *Detection of Single Spin Decoherence in a Quantum Dot via Charge Currents.* Invited talk. D. Loss. Spintronics 2001: NOVEL ASPECTS OF SPIN-POLARIZED TRANSPORT AND SPIN DYNAMICS, Georgetown, August 9-11, 2001.
95. *Spintronics and Quantum Computing.* Invited talk. D. Loss. Euroconference Quantum Optics XII, 6-11 October 2001, San Feliu, Spain. Cancelled.
97. *Spintronics and Quantum Computing in Nanostructures.* Invited talk. D. Loss. Aspen workshop on "Spins in Nanostructures", Aspen Center for Physics, Aspen, CO, USA, July 30 - August 17, 2001.
98. *Spintronics and Quantum Information Processing in Nanostructures.*D. Loss. Invited Talk. Nanoscience II: From microfabrication to single molecular recognition. Pontresina, Switzerland, September 25-27, 2001.
99. *Spintronics and Quantum Information Processing in Nanostructures.* D. Loss. Invited Lecturer on Workshop on Quantum Computation and Quantum Information, November 1-3, 2001 KIAS International Conference Hall, Seoul, Korea. November 5-6, 2001, Postech and KAIST. Cancelled.
100. *Andreev-Tunneling, Coulomb Blockade, and Resonant Transport of Non-Local Spin-En-tangled Electrons.* P. Recher and D. Loss. Invited talk. Workshop on Nanoscience, October 16-19, Twannberg, Switzerland.
101. *Quantum Computing in Molecular Magnets.* M. Leuenberger and D. Loss. Invited talk. GdR POMMES, Journes Thmatiques Physique et Chimie des Nanomolcules Magntiques , Dourdan, France, October 29-30, 2001.
102. *Spintronics and Quantum Information Processing in Nanostructures.* D. Loss. Invited talk. ITP workshop on Quantum Information: Entanglement, Decoherence and Chaos, Aug 13, 2001 - Dec 20, 2001.
103. *Electron and Nuclear Spin Dynamics in Ferric Wheels.* F. Meier and D. Loss. Contributed talk. Mid-term meeting of the network "MolNanomg ", Dourdan (south of Paris), 13-15 of December, 2001.
104. *Quantum Computing in Molecular Magnets.* M. Leuenberger and D. Loss. Contributed talk. Mid-term review meeting of the MolNanoMag network, Dourdan, France, December 13-15, 2001.
105. *Incoherent Zener Tunneling and Berry Phase Oscillations in Molecular Magnets.* M. Leuenberger and D. Loss. Contributed talk. Mid-term review meeting of the MolNanoMag network, Dourdan, France, December 13-15, 2001.
106. *Quantum Computing in Quantum Dots and Spin Decoherence.* D. Loss. Invited talk. SPIN-QUBITS DARPA MEETING Delft 27-29 January 2002, the Netherlands.
107. *Quantum Computing with Quantum Dots.* Invited talk. G. Burkard and D. Loss. IWQDQC (First International Workshop on Quantum Dots for Quantum Computing), Kochi, Japan, January 26 (Sat) - 28 (Mon), 2002.
108. *Spintronics and Quantum Information Processing in Nanostructures.* D. Loss. Invited talk. 13. Edgar Luescher Seminar 2002, February 2 - 7, 2002, Serneus, Switzerland.
109. *Entanglement and Superconductivity.* P. Recher and D. Loss. Invited talk. 13. Edgar Luescher Seminar 2002, February 2 - 7, 2002, Serneus, Switzerland.
110. *Spintronics and Quantum Information Processing in Nanostructures.* D. Loss. Invited plenary talk. 9th MEL-ARI/NID Workshop, in parallel with the 1st National Workshop on Current Trends in Nanotechnologies, February 6-8, 2002, Catania, Italy.
111. TBA. D. Loss. Invited talk. 2002 Winter Conference on Condensed Matter Physics from February 10-16, 2002 at the Aspen Center for Physics, Aspen, USA. Cancelled.
112. *Decoherence of spin qubits in quantum dots.* D. Loss. Invited talk. NATO ARWorkshop on "Recent Trends in Theory

of Physical Phenomena in High Magnetic Fields", Feb. 25 - March 1st, in Les Houches, France.

113. *Electron spins in quantum dots as qubits for quantum information processing.* D. Loss. Invited talk. JST Symposium on Quantum Computing, Tokyo, Japan, March 12-14, 2002.
114. *Spin-Qubits and Entanglement in Nanostructures.* D. Loss. Invited talk. Quantum Entanglement, EURESCO Conference, March 23 - 28, 2002, San Feliu of Guixols, Spain.
115. *Spintronics and Quantum Information Processing in Nanostructures.* D. Loss. Invited talk. Gordon Conference on Magnetic Nanostructures May 12-17, 2002 Il Ciocco Barga, Italy.
116. *Spintronics and Quantum Information Processing in Nanostructures.* D. Loss. Invited talk. Quantum Information Science Workshop, Innsbruck, Austria, May 28 -31, 2002.
117. *Spin-based Quantum Information Processing in Nanostructures.* D. Loss. Invited talk. 275th Heraeus Seminar on "Hardware Concepts for Quantum Computing", Physikzentrum in Bad Honnef, Bonn, Germany, from May 13 to 16, 2002.
118. TBA. G. Burkard and D. Loss. Invited talk. 10th International Symposium "Nanostructures: Physics and Technology", June 17-21, 2002, St. Petersburg, Russia.
119. *Electron spins in nanostructures as qubits for quantum information processing.* D. Loss. Invited talk. NATO Advance Research Workshop and DARPA Meeting, "Frontiers of Spintronics and Optics in Semiconductors: A Symposium in Honor of E. I. Rashba", MIT, Cambridge MA, USA, June20-22, 2002.
120. Minicourse on Spintronics and Spin-Based Quantum Information Processing in the Solid State. D. Loss. Invited lecturer. E. Fermi School on "QUANTUM PHENOMENA IN MESOSCOPIC SYSTEMS", Varenna, Italy, July 9-19, 2002.
121. TBA. D. Loss. Invited talk.Dynamics Days Asia-Pacific: Second Internat. Conference on Nonlinear Science (DDAP2), Hangzhou, China, August 8-12, 2002.
122. TBA. D. Loss. Invited talk. FEYNMAN FESTIVAL, 23-27 August 2002, Physics Department of the University of Maryland, College Park, MD, USA.
123. *Course on "Solid State devices for Quantum Computation and Information".* D. Loss. Invited Lecturer. International School on Quantum Computation and Information, Portugal, 1 to 8 September 2002.
124. *Controlling entangled electrons and spin polarized currents in novel solid state geometries.* C. Egues and D. Loss. Invited talk. Trends in NanoTechnology", International Conference
(TNT2002), Santiago de Compostela (Spain): September 09-13, 2002.
125. TBA. D. Loss. Invited talk. Workshop on Dephasing, MPI Dresden, Germany, October 4- 8, 2002.
126. TBA. D. Loss. Invited talk. ICTP-INFM Workshop, "Entanglement at the Nanoscale", International Centre for Theoretical Physics, Trieste, Italy, October 28 – November 8, 2002.
127. *Spin-based Quantum Information Processing in Nanostructures.* D. Loss. Invited talk. Symposium on "Progress in mesoscopic transport theory", Swiss Physical Society meeting (Feb. 28, 2002), Lausanne, Switzerland.
128. TBA. D. Loss. Invited talk. "Electrons in zero-dimensional conductors: beyond the single-particle picture" at the Max-Planck Institute for Physics of Complex Systems in Dresden during November 18 - 30, 2002.
129. TBA. D. Loss. Invited talk. Workshop on Geometric Interferometry and Quantum Information, Max-Planck Institute for Physics of Complex Systems in Dresden, February, 2004.
130. *Solid State devices for Quantum Computation and Information.* D. Loss. Invited Lecturer. ICTP workshop on "Quantum Information and Quantum Computation", Trieste, Italy, October 14-25, 2002.
131. *Quantum information processing using electron spins in quantum dots.* G. Burkard. Invited talk. The International Conference on Superlattices, Nano-structures and Nano-devices (ICSNN 2002) July 22 to July 26, 2002 in Toulouse, France.
131. *Spin entanglement and noise for quantum information processing.* D. Loss. Invited talk. NATO Advanced Research Workshop "Quantum Noise in Mesoscopic Physics", June 2-4, 2002, Delft University of Technology, The Netherlands.
132. *Electron spin decoherence in quantum dots due to interaction with nuclei.* D. Loss. Invited talk. ERATO Workshop on Mesoscopic Correlations in Nanostructures, July 26 27, 2002, Dish Hotel Delft, Delft, The Netherlands.
133. *Spin dynamics and Decoherence in a quantum dot.* D. Loss. Invited talk. Workshop on "Mesoscopic Physics and Electron Interaction", 24 June -5 July 2002, ICTP, Trieste, Italy.
134. *Spin dynamics and Decoherence in a quantum dot.* D. Loss. Invited talk. CONFERENCE ON "THE SCIENCE AND TECHNOLOGY OF SPIN TRANSPORT IN NANOSTRUCTURES", August 19-22, 2002 at ICTP in Trieste, Italy,
135. *Scalable spin-qubit circuits with quantum dots.* Invited talk of DARPA-QuIST Consortium (Altshuler, Kouwenhoven, Leburton, Loss, Marcus, Tarucha, Westervelt). Quantum Information Science and Technology (QuIST) PI Meeting, September 9-13, 2002, Cambridge, MA, USA.
136. *Electron spins in quantum dots as qubits for quantum information processing.* D. Loss. Invited talk. Quantum Information Processing & Communication Workshop QIPROCONE, September 16-18, 2002, Trinity College, Dublin, Ireland.
137. *Accessing the Singlet-Triplet Splitting in Double Dots via the Kondo Effect.* V.N. Golovach. Contributed Talk. Jahrestagung in Lausanne, EPFL Lausanne, February 28 - March 1, 2002.
138. *Electron and Nuclear Spin Dynamics in Ferric Wheels.* F. Meier. Invited Talk. Midterm meeting of the MOLNANOMAG network, Paris, December 13-15, 2001.

139. *Electron and Nuclear Spin Dynamics in Ferric Wheels.* F. Meier. Contributed Talk. 2002 Annual Meeting of the German Physical Society, Regensburg, March 11-15, 2002.
140. *Electron and Nuclear Spin Dynamics in Ferric Wheels.* F. Meier. Invited Talk (short). LT23, Hiroshima, Japan, August 20-27, 2002.
141. *TBA.* D. Loss. Invited talk. Third Conference of the ESF programme Quantum Information Theory and Quantum Computing ADVANCES IN QUANTUM INFORMATION PROCESSING: FROM THEORY TO EXPERIMENT Ettore Majorana Center Erice, Sicily, Italy, 15th - 22nd March 2003.
142. *Spin based quantum computing.* D. Loss. Invited talk. International Gordon Research Conference (GRC) on Quantum Information Science, March 23-28, 2003, Ventura, California.
143. *Spin based Quantum Computing in Nanostructures.* D. Loss. Invited talk. XXVI Encontro Nacional de Fsica da Matria Condensada ENFMC (XXVI Brazilian Meeting on Condensed Mater Physics), Caxambu, Brasil, May 06 to 10 2003.
144. *Spin based Quantum Computing in Nanostructures.* D. Loss. Invited talk. Conference on "Quantum and Reversible Comutation", May 28 -31, 2003, Stony Brook, NY, USA.
145. *Spin based Quantum Computing in GaAs Nanostructures.* D. Loss. Invited talk. ICM 2003 (international conference on magnetism), Symposium on Spintronics, Rome, Italy, July 27 - August 1, 2003.
146. *Spin Based Quantum Information Processing in Nanostructures.* D. Loss. Invited lecturer. Int. Sommerschule in Wittenberg 2003, Fundamentals of Quantum Information Processing, Wittenberg, Germany, July 20- August 2, 2003.
147. *Spin based Quantum Computing in Nanostructures.* D. Loss. Invited talk. 24th Risoe International Symposium on Materials Science, SUPERCONDUCTIVITY AND MAGNETISM: MATERIALS PROPERTIES AND DEVELOPMENTS, 10 - 13 September, 2003, Risoe, Denmark.
148. *TBA.* D. Loss. Invited talk. Workshop on Elementary Quantum Processors, October 12 -16, 2003, Physikzentrum Bad Honnef, Bonn, Germany. Cancelled.
149. *Why GaAs is the best choice for electron spin qubits.* D. Loss. Invited talk. Workshop on Quantum Information in Group IV Semiconductors, March 28-29, 2003, Oxnard, USA.
150. *Spin Orbit Effects in Transport and Noise in Nanostructures.* D. Loss. Invited talk. 'Carrier Interactions and Spintronics in Nanostructures' (CISN2003), March 10-12, 2003 at NTT Atsugi R&D center, Japan.
151. *Spin Decoherence in the Spin Boson Model.* D. Loss. Invited participant and talk. Workshop on "Quantum Transport and Correlations in Mesoscopic Systems and QHE", July 28 - August 22, 2003, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.
152. *Spin entanglement and transport in nanostructures.* D. Loss. Invited participant and talk. Interactions and Decoherence in Mesoscopic Systems, Granada, Spain, 6-11 Sep 2003.
153. *Spin-based Quantum Information Processing.* D. Loss. Invited lecturer. Summer School on "Quantum Computation at the Atomic Scale", June 1-11, 2003, Istanbul, Turkey.
154. *Spin based Quantum Computing in Nanostructures.* D. Loss. Invited talk. 2nd International Workshop on Quantum Dots for Quantum Computing and Classical Size Effect Circuits, University of Notre Dame, August 7-9, 2003, USA.
155. *Spin based Quantum Computing in Solid State Systems.* D. Loss. Invited talk and discussion leader of panel on quantum computing in the solid state. Spintech II International Conference and School Semiconductor Spintronics and Quantum Information Technology August 4 - 8, 2003, Brugge (Belgium) Crowne Plaza Hotel.
156. *Current Status of Spin Qubits in GaAs Nanostructures.* D. Loss. Invited talk and panel member. DARPA Quantum Information Science and Technology (QuIST) Program Review Meeting and Workshop - Solid State Qubits: Fantasy vs. Reality, June 22-26, 2003, Beverly Hills,CA,USA.
157. *Spin qubits in Quantum Dots and Spin Clusters.* D. Loss. Invited talk. Quantum Information and Ordered Systems Sept. 11-13, 2003 NORDITA/QUANTOP(NBI), Copenhagen, Denmark.
158. *Spin Qubits in GaAs Nanostructures.* D. Loss. Invited talk. Workshop on 'Correlations, Decoherence and Spin Effects in Simple and Complex Quantum Dot Systems', '316. Wilhelm and Else Heraeus Seminar', WE-Heraeus foundation (http://www.we-heraeus-stiftung.de), October 23rd to October 25th, 2003, Bad Honnef, Germany.
159. *Spin qubits and Entanglement.* D. Loss/D. Saraga. Invited talk (keynote speaker). The 5th International Workshop on Future Information Processing Technologies (IWFIPT) Nov. 10 (Mon.) - Nov.13(Thu.), 2003, Miyazaki, Japan.
160. *Non-ballistic spin field-effect transistor and anisotropic transport.* D. Loss. Invited talk. Annual DARPA DSO SpinS Spintronics PI Review, October 13-16, 2003, Fairmont Miramar Hotel, Santa Monica,CA,USA.
161. *Entanglement in spin-qubit systems.* D. Loss. Invited talk and participant in Workshop on Fundamentals of Solid State Quantum Information Processing, Lorentz Center, Leiden University, 8-12 December 2003, The Netherlands.
162. *TBA.* D. Loss. Invited Plenary Talk. Solid State Quantum Information Processing Conference December 15-18, 2003, Amsterdam, The Netherlands.
162. *TBA.* D. Loss/J. Schliemann, Invited talk. Focus meeting on Few qubits applications of quantum information processing, Dec. 11 -14, 2003, Budmerice, Slovakia.
163. *Quantum Information Processing in Nanostructures.* D. Loss. Invited lecturer. European Summer University on Fundamentals of Nanoscience, Strasbourg, France, July 6-13, 2003.
164. *Decoherence of Spins in Quantum Dots.* D. Loss. Invited talk. "Spins in Nanostructures: From Atoms and Quantum

Dots to Magnets", Aspen Center for Physics (Aspen, CO, USA) from January 4-10, 2004.

165. *Quantum Computing with spin qubits.* D. Loss. Invited talk. The 2004 Latsis Symposium on Quantum Optics for Communication and Computing, 1-3 March 2004, Auditoire SG1, EPF Lausanne, Switzerland.
166. *TBA.* D. Loss. Invited talk. Workshop on "Frontiers in Condensed Matter Physics", Aspen/Snowmass, USA, 5-8 August 2004. Cancelled.
167. *Spin Qubits in QDs: relaxation and decoherence.* D. Loss. Invited talk. Summerschool on Semiconductor Quantum Dots: Physics and Devices, 5-10 September 2004, Monte Verita, Ascona, SWITZERLAND.
168. *Spin Qubits and Decoherence.* D. Loss. Invited talk and participation. School and Workshop on "Quantum enatnglement, information and geometrical phases in complex systems", ICTP Trieste, Italy, Nov. 1-12, 2004.
169. *TBA.* D. Loss/V. Golovach. Invited talk and participation. Workshop conference on Cooperative Phenomena in Optics and Transport in Nanostructures, June 10-16, 2004 at the Max Planck Institute for the Physics of Complex Systems (MPI PKS), Dresden, Germany.
170. *Hyperfine interaction and spin qubits in quantum dots.* D. Loss/B. Coish. Invited talk. 13th International Conference on Hyperfine Interactions and the 17th International Symposium on Nuclear Quadrupole Interaction, Joint Meeting in Bonn, Germany from August 23-27, 2004.
171. *Spin qubits in GaAs quantum dots: read out and decoherence.* D. Loss/H.A. Engel/V. Golovach. Invited talk. QSIT (ETH) meeting, Flums, Switzerland, March 5-7, 2004.
172 *Spin decoherence and ESR in (artificial) atoms.* D. Loss. Invited talk. Preparation meeting (STREP) on the Project : FP6-2003-NMP-TI-3, Florence, Italy, March 22, 2004.
173. *Spin Qubits and Decoherence.* D. Loss. Invited talk. Meeting on QIPC IP SPIN&QUBIT "Electron spin qubits for scalable solid state quantum computing', Niels Bohr Institute, Copenhagen. Denmark, Aug. 10, 2004.
174. *Spin based quantum information processing.* D. Loss. Invited lecturer. International Workshop on Solid State Based Quantum Information Processing (QIP2004), Herrsching (Munich), Germany, Sept. 13 - 17, 2004.
175. *Spin qubits and decoherence.* D. Loss. Invited talk. A workshop on: Coherent Electronics, Quantum Information Processing, and Quantum Optoelectronics, Frontiers in Nanoscale Science and Technology, October 2526, 2004, Harvard University, Boston, USA.
176. *Spin qubits in Nanostructures.* D. Loss. Invited talk. ESF-JSPS Frontier Science Conference Series for Young Researchers: Quantum Information and Quantum Physics, Shonan Village Center, Japan, 12-18 March 2005.
177. *Quantum Computing and Solid State.* D. Loss. Invited Chair of Opening Session. Gordon Research Conference on Quantum Information Science, February 27 - March 4, 2005, Four Points Sheraton: Harbortown, Ventura, CA.
178. *TBA* D. Loss. Invited talk. International Exploratory Workshop, Manipulating Quantum Spins and Classical Dots, 26-29 April 2005, Les Houches, France.
179. *Spin currents and spin Hall effect.* D. Loss. Invited talk. Conference on Spintronics, The Theoretical Physics Institute, Minneapolis, USA, May 6 - 8, 2005.
180. *Spin Qubits and Decoherence in Quantum Dots.* D. Loss. Invited talk. Workshop on Quantum information and decoherence in condensed matter 2005, June 26 – July 15, Benasque, Spain.
181. *TBA* D. Loss. Invited talk. ESF FORWARD LOOK MEETING ON NANOSCIENCES AND THE FUTURE OF INFORMATION TECHNOLOGY, Institut Curie in Paris, 4-7 April 2005.
182. *TBA* D. Loss. Invited talk. Workshop on Spintronics and Spin-based quantum information processing, International Center for Condensed Matter Physics of the University of Brasilia, at Braslia, Brazil, July 4-8, 2005.
183. *Spin Decay and Entanglement in Quantum Dots.* D. Loss. Invited talk. Workshop on Quantum Computing, Monte Verita, Ascona, Switzerland, July 11-15, 2005.
184. *Spin currents and spin Hall effect.* D. Loss. Invited talk. Third International School and Conference on Spintronics and Quantum Information Technology (Spintech III), see http://www.sanken.osaka-u.ac.jp/spintech3, Awaji Island, JAPAN Aug. 1-5, 2005.
185. *Spin Decay and Hyperfine Interaction.* D. Loss. Invited talk. ICTP Conference on Strongly Interacting Systems at the Nanoscale, Trieste, Italy, Aug. 8-12, 2005.
186. *Quantum Computing with Spin Qubits.* D. Loss and C. Egues. Invited lecturer. 6th International Wilhelm and Else Heraeus Summerschool "Spintronics" , Aug 1 - 12, 2005 in Wittenberg (Germany).
187. *TBA* D. Loss. Invited talk. Quantum Information, International summer school, Max-Planck-Institut fr Physik komplexer Systeme, Dresden, Germany, August 29 - September 30, 2005.
188. *Quantum computing.* D. Loss. Invited talk. ESSDERC2005, Tutorial in Nanoelectronics : Beyond the Roadmap Emerging Research Devices Sept. 12, 2005, Grenoble, France.
189. *Spin currents and spin Hall effect.* D. Loss and O. Chalaev. Invited talk. Workshop on Semiconductor Nano-Spintronics: Spin-Hall Effect and Related Issues. August 8-11, 2005, at Pohang University of Science and Technology, Korea.
190. *TBA* D. Loss. Invited talk. Symposium on Spin- and charge-correlations in molecule-based materials Physical properties, Chemistry and materials aspects Knigstein, Taunus, Germany, October 17 19, 2005
191. *Spin Relaxation and Decoherence in Quantum Dots* D. Loss. Invited talk. Workshop on Decoherence in Solid State Qubits, May 18-20, 2005, LPTHE-Jussieu, Paris, France.

192. *Die Physik des Quanten-Computers.* D. Loss. Invited lecture. Senioren-Universitaet Basel, May 25, 2005, Basel.
193. *Electron Spin Decoherence in Single and Double Quantum Dots.* D. Loss. Invited talk. Meeting of the European "Spintronics" Research Training Network (RTN): Spin-Dependent Transport through Nanostructures - Spintronics'05. Sept. 25-30, 2005, Poznan, Poland.
194. *Spin-based quantum computing in quantum dots.* D. Loss. Invited talk at the 50th anniversary Conference on Magnetism and Magnetic Materials (MMM) (San Jose, Oct 30 - Nov. 3, 2005). Symposium on Semiconductor Spintronics: Physics and Applications.
195. *Quantum Computing in Electronic Solid State Systems.* D. Loss. Invited talk. Quantum Information Workshop, organized by the Max-Planck Society, Germany, and the National Academies, USA, 8-10 Dec., 2005, Munich, Germany.
196. *Spin Decoherence in Single and Double Quantum Dots.* D. Loss. Invited talk. Workshop on Interactions and Dynamics in Low Dimensional Quantum Systems, 4-7 January, 2006, Weizmann Institute of Science in Rehovot, Israel.
197. *Spin qubits and hyperfine interactions in single and double quantum dots.* D. Loss. Invited talk. Frontiers in Nanoscale Science and Technology Workshop in San Francisco on January 26-28, 2006.
198. *Spin qubits and hyperfine interactions in single and double quantum dots.* D. Loss. Invited talk. International Conference on Quantum Computing and Many-Body Systems, January 31- February 3, 2006, Key West, Florida, USA.
199. *Spin based quantum computing in nanostructures.* D. Loss. Invited Plenary Talk. Annual Meeting of the Swiss Physical Society, Feb. 13-14, 2006, Lausanne, Switzerland.
200. *Entanglement in transport and noise.* G. Burkard and D. Loss. Invited Talk. International Symposium on Mesoscopic Superconductivity and Spintronics 2006 (MS+S2006), February 27-March 2, 2006, NTT R&D Center, Atsugi, Kanagawa, Japan.
201. *TBA* D. Loss. Invited talk. Spintronics Conference (to launch the KITP four-month Program on Spintronics from March 13 - June 23, 2006) March 13 - June 23, 2006, Santa Barbara, USA.
202. *Spin Qubits in Nanostructures: Review and Outlook.* D. Loss. Invited plenary talk. DPG - spring meeting of the Division Condensed Matter and EPS - 21st General Conference of the Condensed Matter Division, March 26 - 31, 2006 Dresden, Germany.
203. *Quantum Computing with Spin Qubits in Nanostructures.* D. Loss. Invited lecturer. Spins in Solids Summer School June 18-June 23, Omni Charlottesville Hotel/Charlottesville, Virginia, USA.
204. *EDSR and Spin Hall Currents in 2DEGs.* D. Loss. Invited talk. Symposium on spintronics at CIMTEC 2006, Acireale, Sicily, Italy, June 4-9, 2006.
205. *Spin Qubits in Solid State Systems.* D. Loss. Discussion Leader. 2006 Gordon Research Conference on Quantum Information Science (QIS2006), Il Ciocco, Barga, Italy, May 7-12, 2006.
206. *Quantum Computing with Spin Qubits.* D. Loss. Invited lecturer. College on Physics of Nano-Devices 10 - 21 July, 2006, ICTP, Miramare, Trieste, Italy.
206. *Spin Decoherence in Single and Double Dots.* D. Loss. Invited talk. 28th International Conference on the Physics of Semiconductors (ICPS), Vienna, Austria, July 24-28, 2006.
207. *Hyperfine interaction in quantum dots: non-Markovian evolution and the quantum/classical distinction.* Bill Coish and D. Loss. Invited talk. International Workshop on Frontiers of Quantum Decoherence, August 12-14, 2006, Fields Institute & Bahen Center, University of Toronto, Canada.
208. *Spin-spin coupling in electrostatically coupled quantum dots.* D. Loss. Invited talk. ETH-QSIT workshop on quantum computing. Villa Garbald, Castasegna, Switzerland, Sept. 25-27, 2006.
209. *Nuclear spin ferromagnetic phase transition in an interacting 2D electron gas.* D. Loss. Invited talk. 2007 Aspen Winter Conference on Condensed Matter Physics "Spins in Nanostructures: Dynamics, Spectroscopy, Manipulation and Control", January 14 - 20, 2007, Aspen Center for Physics, Aspen, USA.
210. *Spin qubits in graphene.* B. Trauzettel and D. Loss. Invited talk. QUROPE Winter School on Quantum Information: Ensemble based Quantum Information Processing Obergurgl, Austria, February 18-24, 2007.
211. *Spin qubits in Solid State Systems: An Overview.* D. Loss. Invited talk. March 29-31, 2007 - FNST: Frontiers in Nanoscale Science and Technology workshop University of Tokyo, Tokyo, Japan, Convention Hall, Komaba Research Campus.
212. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* D. Loss. Invited talk. Workshop on Quantum Nanoscience with Spins, Asilomar, CA, USA, July 3-6, 2007.
213. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* D. Loss. Invited talk. Conference on Quantum Phenomena in Confined Dimensions, June 4-8, 2007, ICTP, Miramare, Trieste, Italy.
214. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* D. Loss. Invited talk. Fourth International School and Conference on Spintronics and Quantum Information Technology (Spintech IV), June 17-22, 2007, Maui, Hawaii, USA.
215. *Electric Dipole Induced Spin Resonance in Disordered Semiconductors.* M. Duckheim and D. Loss. Invited talk. Intl. Conference on Spin and charge flow in nanostructures June 27-30, 2007, The Norwegian Academy of Science and Letters, Oslo, Norway.
216. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* D. Loss. Invited talk. Niels Bohr Summer Institute Workshop on "Solid state quantum information systems" 25 June-6 July 2007, Copenhagen, Denmark.

217. Invited Discussion Leader ('Captain') on Quantum Engineering. Workshop on When Matter Meets Information (Entangling the Frontiers of Condensed Matter and Quantum Information Sciences), June 25-29, 2007, Perimeter Institute, Waterloo, Canada.
218. *Spin-Qubits in Quantum Dots and Nuclear Spins.* Invited talk. D. Loss. International Conference on Quantum Information Processing and Communication, Barcelona, Spain, October 15th 19th, 2007.
219. *Spin qubits in nanostructures.* Invited talk. D. Loss. Princeton Workshop on Quantum Computing, Sept. 24-29, 2007, Princeton University, New Jersey, USA.
220. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* Invited talk. D. Loss. 3rd RIEC International Workshop on Spintronics "Solid-state quantum information technology -Spin, Photon and Superconductivity", Laboratory for Nanoelectronics and Spintronics, Res. Inst. Electrical Communication, Tohoku Univ. in Sendai, Japan, October 31-November 1, 2007.
221. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* Invited talk. D. Loss. YKIS2007 workshop on "Interaction and Nanostructural Effects in Low-Dimensional Systems", Yukawa Institute for Theoretical Physics (YITP), Kyoto University, Kyoto, Japan, November 5-30, 2007.
222. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* Invited talk. D. Loss. Frontiers of Spintronics and Spin Coherent Phenomena in Semiconductors: A Symposium in Honor of E. I. Rashba. Harvard University, Boston, USA. 29 February 1 March 2008.
223. *Nuclear Spins in Quantum Dots and Interacting 2DEGs.* D. Loss. Invited talk. Interaction and Interference in Nanoscopic Transport. International workshop - February 18 - 22, 2008. Max-Planck Institute for Physics of Complex Systems in Dresden, Germany.
224. *Hyperfine Interaction in Dots and 2DEGs.* D. Loss. Invited talk. QSIT (ETH Zurich) Start Meeting Arosa, Switzerland, January 23 to 25, 2008.
225. *Hyperfine Interaction in Quantum Dots.* D. Loss. Invited talk. Special NCCR Nanoscience Symposium, at the Swiss Physical Society meeting, March 26-27, 2008, Geneva.
226. *Spin Electric Effects in Disordered 2DEGs.* D. Loss. Invited talk. Workshop on "Spin and Charge Flow in Nanostructures". Oslo, Norway. May 14-16, 2008.
227. *Hyperfine Interaction in Quantum Dots.* D. Loss. Invited talk. Workshop on Quantum Phenomena and Information: From Atomic to Mesoscopic Systems. ICTP, Trieste, Italy, May 5-16, 2008.
228. *Quantencomputer fuer die Zukunft.* D. Loss. Invited talk (key note). I-net Basel Nano, June 24, 2008, Messe Basel, Congress Center.
229. *Spin Based Quantum Computing in Nanostructures.* D. Loss. Invited Lectures. INTERNATIONAL SCHOOL OF PHYSICS "ENRICO FERMI", VILLA MONASTERO, VARENNA (Italy). 2nd Course (CLXXI) QUANTUM COHERENCE IN SOLID STATE SYSTEMS July1st - 11th 2008.
230. *Spin Qubits and Nuclear Spins in Quantum Dots and Interacting 2DEGs.* D. Loss. Invited talk. 5th International Conference on Physics and Applications of Spin-related Phenomena in Semiconductors (PASPS V). August 3 6, 2008, Foz do Iguacu, PR, Brazil.
231. *Nuclear Spin Magnetism in Interacting 2DEGs.* D. Loss. Invited talk. Workshop on Nanoscience, the ULT frontier; ULT 2008: Frontiers of Low Temperature Physics, August 14-17, 2008, Royal Holloway, London (UK).
232. *Spin-qubits in molecular magnets.* D. Loss. Invited talk (key note). ICMM 2008, The 11th International Conference on Molecule-based Magnets, Convitto della Calza, Florence, Italy, 21 - 24 September 2008.
233. *Mesoscopic and disordered systems.* D. Loss. Invited Session Chair. 24th Solvay Conference on Physics "Quantum Theory of Condensed Matter", chaired by B.I. Halperin. Brussels, Belgium, 11-13 October 2008.
234. *Spin Electric Effects in Disordered 2DEGs with Spin Orbit Interaction.* D. Loss. Invited talk. 421st Wilhelm and Else Heraeus-Stiftung on Spin Hall Effect. Physikzentrum Bad Honnef, Germany, October 20 - 23, 2008.
235. *Spin Effects in Quantum Dots and 2DEGs due to Hyperfine and Spin Orbit Interactions.* D. Loss. Invited lecturer (3h). The 23rd Nishinomiya-Yukawa Memorial International Workshop on Spin Transport in Condensed Matter, October 27 - November 28, 2008, Yukawa Institute for Theoretical Physics, Kyoto University, Japan.
236. *Magnetic Ordering of Nuclear Spins in Nanostructures.* D. Loss. Invited talk. QPEC Workshop 2008, Nov. 20, 2008, University of Tokyo, Hong Campus, Tokyo, Japan.
237. *Spin-electric effects in disordered 2DEGs.* D. Loss. Invited talk. 2nd Spintronics Research Committee Meeting (organized by. N. Nagaoto), Nov. 21, 2008, ATI conference room, Tokyo, Japan.
238. *Spin Qubits and Decoherence.* D. Loss. Invited talk. 2008 MRS Fall Meeting, Symposium J, December 1 - 5, Boston, MA, USA.
239. *Hyperfine Interaction in Dots and interacting 2DEGs.* D. Loss. Invited talk. Workshop on Solid state quantum information, 03 December 2008 - 06 December 2008, Scuola Normale Superiore, Pisa, Italy.
240. *Nuclear spins in nanostructures.* D. Loss. Invited talk. 23rd International Winterschool on: Electronic Properties of Novel Materials: Molecular nanostructures (IWEPNM 09), March 07 -14, 2009, Kirchberg, Austria.
241. *Nuclear Spins in Dots, Tubes, and Wires.* D. Loss. Invited talk. International Workshop and School on "Solid State Based Quantum Information Processing 2009", Herrsching, Germany, June 28 to July 3, 2009. Jointly organized by the

Munich Research Centers and the quantum information groups at the TU Delft, the University of Basel and the ETH Zrich.

242. *Nuclear Spins in Dots, Tubes, and Wires.* D. Loss. Invited talk. Frontiers in Nanoscale Science and Technology Workshop 2009, May 29-31, 2009, Harvard University, Cambridge, USA.
243. *Nuclear Spins in Dots, Tubes, and Wires.* D. Loss. Invited talk. Spin-Up 2009 workshop May 31st-June 4 2009, Longyearbyen, Svalbard, 78 degrees North 16 degrees East (Spitzbergen).
244. *Nuclear Spins in Dots, Tubes, and Wires.* D. Loss. Invited Lecturer. Advanced Workshop: Spin and Charge Properties of Low Dimensional Systems June 29 -July 4, 2009, Sibiu, Romania.
245. *Quantum computing with spins in nanostructures.* D. Loss. Keynote talk. Nanoconvention 2009 (EMPA), Swisstel Zrich-Oerlikon, Switzerland, 6. Juli 2009.
246. *Nuclear Spins in Dots, Tubes, and Wires.* D. Loss. Invited talk. Workshop on The Heisenberg Model: Past, Present and Future - Braslia, Brazil, International Center for Condensed Matter Physics (ICCMP), July 20-27 2009.
247. *Spin-based quantum computation in nanostructures.* D. Loss. Half-Plenary talk. The International Conference on Magnetism 2009, Karlsruhe, Germany July 26 - 31, 2009.
248. *Nuclear Spins in Dots, Tubes, and Wires.* D. Loss. Invited talk. The spin on electronics: A Royal Society scientific Discussion Meeting, 28-29 September 2009, The Royal Society 6-9 Carlton House Terrace, London, UK.
249. *A Self-Correcting Quantum Memory in a Thermal Environment.* D. Loss. Invited talk. INTRIQ's workshop on the physical implementation of quantum information, October 2-3, 2009, La Sapinire in Val David, Canada.
250. *Three Lectures on spintronics in nanostructures.* D. Loss. Invited Lecturer. CNR DMD School of Physics Physics of Spin in Materials, Nov. 2-9, 2009, Chiavari (Genova), Italy.
251. *A Self-Correcting Quantum Memory in a Thermal Environment.* D. Loss. Invited talk. KITP workshop on Quantum Information Science to run for three months, September 14 - December 11, 2009. KITP Santa Barbara, CA, USA.
252. *Magnetic Molecules and Spin-Electric Effects.* D. Loss. Invited talk (2). Mini workshop on molecular spintronics, 14 15 January, 2010, Niels Bohr Institute, Copenhagen, Denmark.
253. *Stability of topological quantum memories in contact with a thermal bath.* S. Chesi, B. Roethlisberger, D. Loss, S. Bravyi, and B. M. Terhal. Contributed talk. QIP 2010-13th Workshop on Quantum Information Processing. January 18 - 22, 2010, ETH, Zurich, Switzerland.
254. *Nuclear Magnetism in Luttinger Liquids.* D. Loss. Invited talk. Spin-Qubit Meeting-Lenzerheide III 2010 International Workshop and DARPA team meeting on recent progress of spin qubits in semiconducting nanostructures; January 24-27, 2010, Lenzerheide, Switzerland.
255. *Nuclear Magnetism in Luttinger Liquids.* D. Loss. Invited talk. 16th International Winterschool on New Developments in Solid State Physics: Low Dimensional Systems, "Mauterndorf 2010", 22 - 26 Feb, 2010, Mauterndorf, Austria.
256. *Spin qubits and nuclear spin effects.* D. Loss. Invited talk. International symposium on "Quantum nanostrutures and spin-related phenomena", jointly sponsored by our ICORP, Hirayama's ERATO (Tohoku-U) and Hirakawa's CREST (Tokyo-U) on March 9-11, 2010 in Tokyo, Japan.
257. *Four Lectures on Spin-Qubits and Quantum Computing* D. Loss. Invited lecturer. The Capri Spring School on Transport in Nanostructures 2010, Capri, Italy, April 11 - April 18, 2010.
258. *Spin effects in Carbon based materials.* D. Loss. Invited talk. 12-14 April, 2010, Discussion Meeting on Fundamental Properties and Applications of Carbon Nanostructures, organized by MPI for Solid State Research, Schloss Ringberg, Germany.
259. *Macroscopic Quantum Coherence in magnetic Nanostructures.* D. Loss. Invited talk. Workshop on "Quantum Coherence and Entanglement on Macroscopic Scales" in Tenerife, Spain, May 6-8, 2010.
260. *Spin qubits in dots, tubes, and wires.* D. Loss. Invited talk. Workshop on QIP for spins and superconductors, May 17-19, 2010, IQC, University of Waterloo, Canada.
261. *Spin qubits in nanostructures.* D. Loss. Invited talk. International Conference on Core Research and Engineering Science of Advanced Materials (Global COE Program) and Third International Conference on Nanospintronics Design and Realization, 3rd-ICNDR. May 30 -June 5, 2010, Osaka, Japan.
262. *Spin qubits in nanostructures.* D. Loss. Invited talk. Workshop on the Physics of Micro and Nano Scale Systems, June 20-24, 2010, Ystad, Sweden.
263. *Spin-electric effects in Molecular Magnets.* D. Loss. Invited talk. Joint EUROMAR 2010 and 17th ISMAR Conference, A WorldWide Magnetic Resonance Conference, Florence, Italy, July 4-9, 2010.
264. *Introduction to Spin Qubits in Quantum Dots.* D. Loss. Invited lecturer. School and conference on Spin-based quantum information processing August 16-20, 2010, Konstanz, Germany.
265. *Quantum Information in Solid State Systems (4 lectures).* D. Loss. Invited lecturer. Windsor Summer School, Windsor, UK, Aug. 2010.
266. *Spin-electric effects in Molecular Antiferromagnets.* D. Loss. Invited talk. 3rd NordForsk Nanospintronics Workshop"Nanospintronics: Theory and Simulations, September 22-24, 2010, Norrköping, Sweden.
267. *Quantum Information in Solid State Systems (4 lectures).* D. Loss. Invited lecturer. 1st Sao Paulo School of Advanced Science: Spintronics and Quantum Computation, Nov. 1-5, 2010, University of Sao Paulo at Sao Carlos, Brazil.

268. *Quantenphysik des Quantencomputers.* D. Loss. Invited talk. Marcel Benoist Prize Ceremony, University of Basel, Nov. 25, 2010.
269. *Helical modes and Majorana edge states in interacting nanowires.* D. Loss. Invited lecturer. Frontiers in Nanoscale Science and Technology Workshop 2011 January 5-7, 2011, RIKEN Wako Campus (Tokyo), Japan.
270. *Mesoscopic Quantum Coherence: Quantum Measurement Frontiers.* D. Loss. Invited talk. Kavli Futures Symposium Plenty of Room in the Middle: Nanoscience The Next 50 Years, Caltech, Pasadena, USA.
271. *Helical modes and Majorana edge states in interacting nanowires.* D. Loss. Invited talk. Majorana meeting program Caltech, 114 E. Bridge, Pasadena, USA, January 17th-18th, 2011.
272. *Spin Qubits in Solid State Systems.* D. Loss. Invited talk. Symposium on Contemporary Problems in Condensed Matter Theory, March 9th, 2011, Ben-Gurion University, Beer Sheva, Israel.
273. *Quantum information in solid-state systems (U55.00002).* D. Loss. Invited talk. Session U55: "Trends" in the APS Publication Physics. APS March Meeting 2011, March 2125, 2011; Dallas, Texas, USA.
274. *Helical modes and Majorana edge states in interacting nanowires.* D. Loss. Invited talk. CIFAR Quantum Physics Discussion and WinterSchool April 03- 07, 2011, Fairmont Chateau Whister, Whistler, Canada.
275. *Quantum information in solid-state systems: spin qubits in quantum dots.* D. Loss. Invited talk. Colloquium Celebrating the Foundation of the Peter Grünberg Institute, April 7-8, 2011, Forschungszentrum Jülich, Germany.
276. *Helical modes and Majorana edge states in interacting nanowires.* D. Loss. Invited talk. 15th Brazilian Workshop on Semiconductor Physics (BWSP-15), April 10 15, 2011, Juiz de Fora, Minas Gerais, Brazil.
277. *Quantum information in solid-state systems: spin qubits in quantum dots.* D. Loss. Invited talk. Opening of the new Nanotech Center, May 17, IBM Research - Zurich, Switzerland.
278. *Harvard: System Overview and Phase 1 MQS Design (Theory).* D. Loss. Invited talk. 2011 Multi-Qubit Coherent Operations Program Review; Sheraton Austin Hotel (Capitol), June 6 - 8, 2011; Austin, Texas, USA.
278. *Quantum Spin Physics in Lower Dimensions: Some Selected Topics.* D. Loss. Invited talk. 2nd Swiss-Swedish meeting on Quantum Materials and Devices, 25 - 27 August, 2011, Stenungsbaden, Sweden.
279. *Helical modes and Majorana edge states in interacting nanowires.* D. Loss. Invited talk. WORKSHOP on Superconducting hybrids: from conventional to exotic. Villard de Lans, France September 7-10, 2011.
281. *TBA* D. Loss. Invited talk. WORKSHOP on ENTANGLEMENT IN SOLID STATE SYSTEMS Sept. 20-22, 2011, Campus Ecotekne, Universit del Salento, Lecce, Italy.
282. *Absence of spontaneous magnetic order in low-dimensional (RKKY) systems.* D. Loss. Invited talk. Satellite Materials World Network meeting on "Nuclear spins in semiconductor heterostructures", October 4, 2011, Hotel "I Corbezzoli", Porto Ottiolu, Sardinia, Italy.
283. *TBA.* D. Loss. Invited lecturer. Cancelled. Engineering and Control of Quantum Systems Workshop: October 10 - 14, 2011, Max-Planck-Institut fr Physik komplexer Systeme, Dresden, Germany.
284. *TBA.* D. Loss. Invited talk. CIFAR Nanoelectronics meeting, Napa Valley, USA, Nov. 14-17, 2011.
285. *TBA.* D. Loss. Invited talk. Cancelled. International Conference on Recent Progress in Many Body Theories, Bariloche, Argentina, Nov. 28 - Dec. 2 2011.
286. *Spin qubits in quantum dots.* D. Loss. Invited lecturer (2h). Dynamical Control of Quantum Coherence for Current and Future Information Technologies, December 11-13, 2011. Croucher Advanced Study Institute. The Chinese University of Hong Kong, China.
287. *Helical modes and Majorana end states in interacting nanowires.* D. Loss. Invited talk. 5th International Workshop on Solid-State Quantum Computing, December 11-13, 2011. The Chinese University of Hong Kong, China.
288. *IARPA Spin-MQS: Theory Basel.* D. Loss. Invited talk. 2012 IARPA MQCO Spin Qubits Annual Program Meeting, 12-14 January, 2012. The Sebel Pier, Sydney, Australia.
289. *Spin qubits and scalable 2D architectures.* D. Loss. Invited talk. First NASA Quantum Future Technologies Conference (QFTC). January 1721, 2012. NASA Ames Research Center Moffett Field, California, USA.
290. *Part I: Nuclear spin ordering in low dimensions. Part II: Long-distance entanglement of spin-qubits* . D. Loss. Invited talk. Simons Symposium: Quantum Physics Beyond Simple Systems. St. John, Virgin Islands, USA. January 29 - February 4, 2012.
291. *Spin qubits and decoeherence.* D. Loss. Lecturer. International School of Physics "Enrico Fermi" Summer Course CLXXXIII 2012: Quantum Spintronics and Related Phenomena, 19 - 29 June 2012, Varenna, Italy.
292. *Spin Qubits and Scalable 2D Architectures* . D. Loss. Invited talk. IBM MRC Workshop: New Computation Paradigms, Aug. 6-7 2012, Rueschlikon, Switzerland.
293. *I. Spin Boson model. II. Spin qubits and decoherence.* D. Loss. Invited lecturer. The 6th Windsor Summer School Low-Dimensional Materials, Strong Correlations, and Quantum Technologies. Cumberland Lodge, Great Park, Windsor, UK, 14-26 August 2012.
294. *Transition from fractional to Majorana fermions in Rashba nanowires.* D. Loss. Invited talk. Workshop on Majorana Fermions, Non-Abelian Statistics and Topological Quantum Information Processing 20 - 24 August, 2012, ICTP Trieste, Italy.
295. *Spin Qubits and Scalable 2D Architectures.* D. Loss. Invited talk. QDev Kick-Off 2012 at the Niels Bohr Institute,

September 28, 2012, Copenhagen, Denmark.

296. *Spin Qubits and long-range coupling.* D. Loss. Invited talk. 2013 IARPA MQCO Spin Qubits Annual Program Meeting, 10-12 January, 2013; Sydney, Australia.
297. *Local 3D spin Hamiltonian as a thermally stable surface code.* D. Loss. Invited talk. Coogee'13, Sydney Quantum Information Theory Workshop, 15 - 18 January 2013; Sydney, Australia.
298. *Fractional Fermions and Majorana Fermions in Nanowires.* D. Loss. Invited talk. QS2C Theory Forum: International Symposium on Strongly Correlated Quantum Science, Jan. 26-29, 2013, Univ. of Tokyo, Tokyo, Japan.
299. *Exotic Quantum Matter: Fractionals, Majoranas, and non-Abelions.* D. Loss. Invited talk. Arosa QSIT meeting, Jan. 30- Feb. 1, 2013, Arosa, Switzerland.
300. *Spin Qubits and Scalable 2D Architectures.* D. Loss. Invited talk. WINTER SCHOOL - "Few spin solid state nanosystems" The S3Nano Winter School, 3 - 6 Feb. 2013 at Cumberland Lodge in Windsor. London, UK.
301. *Strong Spin-Orbit Interaction and Helical Holes in Ge/Si Nanowires.* D. Loss. Invited talk. International workshop on Silicon Quantum electronics, Villard-de-Lans, France, 7-8 February 2013.
302. *Majorana Fermions in Nanowires and self-tuned RKKY systems.* D. Loss. Invited talk. Majoranas in Solid State Workshop, June 3-7, Beijing University, China.
303. *Majorana Fermions in Nanowires and self-tuned RKKY systems.* D. Loss. Invited talk. CONFERENCE ON MAJORANA PHYSICS IN CONDENSED MATTER, ETTORE MAJORANA CENTER, INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS, JULY 12-18, 2013, ERICE (SICILY), ITALY.
304. *Spin Qubits and Long-Distance Entanglement via Ferromagnets.* D. Loss. Invited talk. Spintech VII, International School and Conference on Spintronics and Quantum Information Technology. July 29- Aug. 2, 2013, Chicago, USA.
305. *Majorana Fermions in Nanowires and self-tuned RKKY systems.* D. Loss. Invited talk. International Seminar and Workshop on Spin Orbit Entanglement: Exotic States of Quantum Matter in Electronic Systems 15 July - 2 August 2013, MPIPKS, Dresden, Germany.
306. *Exotic Quantum States at the Edge: Majorana Fermions and other Bound States.* D. Loss. Invited lecturer. STEP - 2013, International Summer School on Superconductivity, Cargse, France, August 5-17, 2013.
307. *IARPA Progress Report: Basel Team.* D. Loss. Invited talk. IARPA Site Visit, Harvard University, Boston, USA, Sept. 6, 2013.
308. *Majorana Fermions in Nanowires and self-tuned RKKY systems.* D. Loss (substituted by J. Klinovaja). Invited talk. WORKSHOP "QUANTUM MAGNETS 2013", SEPTEMBER 9-13, 2013, KOLYMBARI, CRETE
309. *Spin Qubits and Long-Distance Entanglement.* D. Loss. Invited talk. FIRST Quantum Spin Information and Technology, School for spin and quantum information, September 24, 2013, Takeda Hall, The University of Tokyo, Japan.
310. *Helical spin textures and Majorana fermions.* D. Loss. Invited talk. International Conference on Concepts in Spintronics, Sep 30, 2013 - Oct 4, 2013, KITP, UC Santa Barbara, USA.
311. *Electric field effects in GeSi core shell nanowires.* C. Kloeffel/F. Meier/D. Loss. Invited talk. SiSpin kick-off meeting, Sept. 16-17, 2013, Paris, France.
312. *Long-Range Interaction of Spin-Qubits via Ferromagnets.* D. Loss. Invited talk. Swiss-Japanese Nanoscience Workshop: Materials Phenomena at Small Scale, Oct. 9-12, 2013, NIMS MANA, Tsukuba, Japan.
313. *Majorana Fermions and other Exotic Quantum States at the Edge.* D. Loss. Invited talk. NIM?Workshop Young Ideas in Nanoscience and Advisory Board Meeting, Nov. 18, 2013, Munich, Germany.
314. *Solid-state quantum computing with spin qubits.* D. Loss. Invited 2h lecture. MORIS 2013, Magnetics and Optics Research International Symposium, December 2-5, 2013, OMIYA SONIC CITY, Saitama, Japan.
315. *Spintronics and Quantum Computing.* D. Loss. Invited 'Blackboard talk'. Spintronics workshop, Dec. 4, 2013, KITP, UC Santa Barbara, USA.
316. *Exotic Quantum States and Topological Phases in Nanowires.* D. Loss. Invited talk. Simons Symposium: Quantum Physics Beyond Simple Systems. February 23- March 1, 2014. St. Regis Bahia Beach Resort Rio Grande, Puerto Rico.
317. *Exotic Quantum States at the Edge: From Majorana- to Para-Fermions.* D. Loss. Invited talk. FIRST International Symposium on Topological Quantum Technology, Univ. of Tokyo, January 27 - 30, 2014, Tokyo, Japan.
318. *Exotic Quantum States and Topological Phases in Nanowires.* D. Loss. Invited lecturer. 3rd NCCR QSIT Winter School, Feb 3 - 5, 2014, Waldhotel National, Arosa, Switzerland.
320. *Exotic Quantum States at the Edge: From Majorana- to Para-Fermions.* D. Loss. Invited talk. Topology and New Frontiers of Materials Science, March 31-April 2, 2014, NIMS, Tsukuba, Japan.
321. *IARPA Progress Report on spin qubits.* D. Loss. Invited talk. Harvard University, Cambridge, MA, USA; 13-16 April, 2014.
322. *Spin Qubits and Long-Distance Entanglement.* D. Loss. Invited talk. 2nd school and conference on spin-based quantum information processing (Spin Qubit 2) Konstanz, August 18-21, 2014.
323. *Why and How To Measure Spin Orbit Interaction in Rashba Nanowires.* D. Loss. Invited talk. 8th Nanowire Growth Workshop Nanowires 2014, Eindhoven, Holland, August 25-29, 2014.
324. *How To Measure Spin Orbit Interaction in Rashba Nanowires.* D. Loss. Invited talk. 4th Summer School on Semiconductor/Superconducting Quantum Coherence Effects and Quantum Information, 11-13 September, 2014, Nasu, Japan.

325. *Spin Orbit Interaction in Nanowires for Majorana and other Bound States.* D. Loss. Invited talk. 2nd CEMS topical research camp, 9-10th October, 2014, Minakami (Japan).
326. *IARPA Progress Report: Basel Team.* D. Loss. Invited talk. IARPA Review Meeting, Copenhagen University, Denmark, Nov. 23-25, 2014.
327. *Spin Orbit Interaction and Nuclear Spins in Nanowires for Majorana Fermions and other Exotic Bound States.* D. Loss. Invited plenary talk. International Symposium on Quantum System and Nuclear Spin Related Phenomena (QSNS). 18-20 February, 2015. Miyagi-Zao Royal Hotel, Miyagi, Japan.
328. *Topological states in coupled wire systems: From Majorana Fermions to Parafermions.* D. Loss. Invited talk. Topotronics 2015, June 9-12, Okinawa, Japan.
329. *Spin Orbit Interaction and Nuclear Spins in Nanowires for Majorana Fermions and other Exotic Bound States.* D. Loss. Invited talk. International workshop on 'Top-Spin: Spin and Topological phenomena in nanostructures', May 14-15, 2015, Salerno, Italy.
330. *Integer and Fractional Quantum Anomalous Hall Effect from Magnetic Skyrmion Texture in a Strip of Stripe Model.* D. Loss. Invited talk. Workshop on Topological Magnets, May 25-27, 2015, Saitama, Japan.
331. *Majoranas and other Exotic Edge States in Nanowires and Atomic Chains.* D. Loss. Keynote lecturer. Summer School on Magnetic solotronics in semiconductors and Dirac materials, Lake Como School of Advanced Studies, 15-20 June 2015, Como, Italy.
332. *High-efficency resonant amplification of weak magnetic fields for single spin magnetometry.* D. Loss. Invited talk. NanoMRI Conference, July 27-31, 2015, Waterloo, Canada.
333. *Nuclear Spins and Spin Orbit Interaction in Nanowires for Majorana Fermions.* D. Loss. Invited talk. Conference on Frontiers of Nanoscience, ICTP, 24 August - 1 September, 2015, Miramare - Trieste, Italy.
334. *Quantum Computing in Semiconductors: Spin Qubits, Majoranas, and all that.* D. Loss. Invited talk. Swiss Nanoscience Institutes Annual Meeting, September 3-4, 2015, Hotel Schweizerhof, Lenzerheide, Switzerland.
335. *IARPA Progress Report: Basel Team.* D. Loss. Invited talk. IARPA Review Meeting, Copenhagen University, Denmark, Oct. 1-4, 2015.
336. *Majoranas and Parafermions in Nanowires and Atomic Chains.* D. Loss. Invited talk. Workshop on 'Majorana Zero Modes and Beyond', University of Pittsburgh, USA, November 5-7 2015.
337. *Spin currents and Wiedemann-Franz law for magnons.* D. Loss. Invited talk. 603. WE-Heraeus-Seminar on Magnonics Spin Waves Connecting Charges, Spins and Photons January 6 - 8, 2016, at the Physikzentrum Bad Honnef/Germany.
338. *From Majorana- to Para-Fermions in Nanowires and Atomic Chains.* D. Loss. Invited talk. CEMS International Symposium on Dynamics in Artificial Quantum Systems (DAQS2016), Komaba Research Campus, University of Tokyo, Japan, January 12-14, 2016.
339. *From Majorana- to Para-Fermions in Nanowires.* D. Loss. Invited talk. Majorana workshop 2016; Mainz
340. *Spin Currents and Transport Coefficients in Insulating Magnets.* D. Loss. Invited talk. Insulatronics 2016 in Longyearbyen, Svalbard, May 27-31 2016.
341. *Spin Qubits in Nanostructures.* D. Loss. Invited Lecturer. Summerschool: Nanotechnology meets Quantum Information, July 11-14, 2016, Donostia-San Sebastian, Spain.
342. *Spin Qubits in Quantum Dots.* D. Loss. Invited talk. ICPS 33rd International Conference on the Physics of Semiconductors Beijing, China, 2016.7.31 - 2016.8.5.
343. *From Majorana- to Para-Fermions in Nanowires.* D. Loss. Invited talk. International workshop on Topological States of Matter, September 5-9, 2016, Donostia International Physics Center (DIPC), San Sebastian, Spain.
344. *From Majorana- to Para-Fermions in Nanowires.* D. Loss. Invited talk. International Workshop on "Emergent Relativistic Effects in Con-densed Matter" in Regensburg, Germany, September 27 - 29, 2016.
345. *From Majorana- to Para-Fermions in Coupled Nanowires.* D. Loss. Invited talk. International School and Conference on Nanoscience and Quantum Transport (nanoQT-2016), 8 - 14 October 2016, Kiev, Ukraine.
346. *From Majorana- to Para-Fermions in Coupled Nanowires.* D. Loss. Invited talk. International workshop on Nano-Spin Conversion Science and Quantum Spin Dynamics. Oct 12-15, 2016, Tokyo, Japan.
347. *From Majorana Fermions to Parafermions in Nanowires and Atomic Chains.* D. Loss. Invited talk. International Workshop on Spin Coherence and Topological Order in Semiconductor Nanosystems. Beijing Computational Science Research Center (CSRC), November 2-4, 2016, Beijing, China.
348. *Spin Qubits in Quantum Dots: An Overlook with Outlook* D. Loss. Invited talk (tutorial). Workshop of the French GDR of Quantum Information, Telecom ParisTech, November 16-18, 2016, Paris, France.
349. *Spin qubits in semiconducting nanostructures.* D. Loss. Invited Lecturer. Quantum Information Science (QIS) Mini-School, National Taiwan University, 10-11 Dec., 2016, Taipei, Taiwan.
350. *From Majorana Fermions to Parafermions in Nanowires and Atomic Chains.* D. Loss. Invited talk. 8th International Workshop on Solid State Quantum Computing (IWSSQC), National Taiwan University, 12-15 Dec., 2016, Taipei, Taiwan.
351. *From Majorana Fermions to Parafermions in Nanowires and Atomic Chains.* D. Loss. Invited talk. The 44th Conference on the Physics and Chemistry of Surfaces and Interfaces (PCSI-44), La Fonda Hotel in Santa Fe, New Mexico, from Sunday January 15 -19, 2016, Santa Fe, New Mexico, USA.

352. *Spin qubits in semiconducting nanostructures.* D. Loss. Invited talk. Cancelled. 635th WE-Heraeus Seminar on "Scalable Architectures for Quantum Simulation", 29 January - 2 February, 2017, Bad Honnef, Germany.
353. *From Majorana Fermions to Parafermions in Nanowires and Atomic Chains.* D. Loss. Invited talk. The 44th Conference on the Physics and Chemistry of Surfaces and Interfaces (PCSI-44), Santa Fe, USA, January 15-19, 2017.
354. *Topological quantum computing with Majorana- and Parafermions.* D. Loss. Invited lecturer. JST IMPACT Meeting, March 28, 2017, Tokyo, Japan.
355. *From Majorana Fermions to Parafermions in Nanowires and Atomic Chains.* D. Loss. Invited talk. MAJORANA STATES IN CONDENSED MATTER: TOWARDS TOPOLOGICAL QUANTUM COMPUTATION 14-20 May 2017, Mallorca, Spain.
356. *From Majorana to Parafermions in Single and Double Nanowires.* D. Loss. Invited talk. Frontiers in Emergent Quantum Phenomena Center for Quantum Phenomena Inaugural Symposium June 28-30, 2017, at NYU, New York, USA.
357. *Spin qubits in semiconducting nanostructures.* D. Loss. Invited Lecturer. 9th International School and Conference on Spintronics and Quantum Information Technology, June 4-8, 2017, Fukuoka, Japan.
358. *From Majorana to Parafermions in Nanowires.* D. Loss. Invited talk. Beyond! Topology and Materials, Jul 9-12, 2017, Schloss Ringberg, Max Planck Society, Kreuth, Germany.
359. *From Majorana to Parafermions in Nanowires.* D. Loss. Invited talk. Spin-Orbit Materials 2017, July 24-26, Luxembourg.
360. *Proximity Effect in Single and Double Rashba Nanowires.* D. Loss. Invited talk. Nanophysics, from fundamental to applications: Reloaded, 30 Jul-5 Aug 2017, Quy Nhon (Vietnam).
361. *Proximity effects in single and double Majorana nanowires.* D. Loss. Invited Lecturer. Workshop on Fundamentals on Quantum Transport, 7 -11 Aug 2017, ICTP, Trieste, Italy.
362. *Magnonic topological insulators in antiferromagnets.* D. Loss. Invited talk. Workshop Quantum Spintronics at Interfaces PALACIO DE MIRAMAR, Sept. 4-8, 2017, DonostiaSan Sebastin, Spain.
363. *Spin qubits in semiconducting nanostructures.* D. Loss. Invited Lecturer. Advanced School and Workshop on Quantum Science and Quantum Technologies 4-15, Sep 2017, ICTP, Trieste.
364. *From Majorana to Parafermions in Nanowires.* D. Loss. Invited talk. European Materials Research Society Meeting, Symposium on Spintronics in semiconductors, 2D materials and topological insulators, Sept. 17-21, 2017, Warsaw, Poland.
365. *Spin Qubits in Quantum Dots.* D. Loss. Invited talk. 6th International Workshop on Epitaxial Growth and Fundamental Properties of Semiconductor Nanostructures (Semicon Nano 2017), September 25-28, 2017, Como, Italy.
366. *Majorana and Parafermions in Interacting Rashba Nanowires.* D. Loss. Invited talk. Gordon Godfrey Workshop 30 October - 3 November 2017, Sydney, Australia.
367. *Hole Spin Qubits in Ge and Si.* D. Loss. Invited talk. Spin Qubit 3: 3rd Conference and Workshop on Spin-Based Quantum Information Processing, November 6-10,2017, Sydney, Australia.
368. *Proximity Effects in Single and Double Majorana Nanowires.* D. Loss. Invited Keynote Speaker. WORKSHOP ON THERMOELECTRIC TRANSPORT WITH NANOWIRES, 11-12 December, 2017, Eindhoven University Campus, the Netherlands.
369. *Proximity Effects in Single and Double Majorana Nanowires.* D. Loss. Invited Speaker. 20th International Winterschool on New Developments in Solid State Physics, Castle of Mauterndorf, Austria, 25 Feb - 02 March, 2018.
370. *Majorana Fermions: Facts and Fictions.* D. Loss. Invited talk. "AJL at 80: Challenges in Quantum Foundations, Condensed Matter Physics and Beyond A Celebration of Sir Tony Leggetts 80th Birthday, March 30-31, 2018 , Urbana (USA).
371. *Proximity Effect in Nanowires and Majorana Fermions in Atomic Chains.* D. Loss. Invited talk. New Platforms for Topological Superconductivity with Magnetic Atoms, International Focus Workshop, 9 - 11 April 2018, MPIPKS, Dresden, Germany.
372. *Majorana Fermions and Proximity Effect in Nanowires and Skyrmions.* D. Loss. Invited talk. Topological transformational matter and devices. April 22-25, 2018, Ringberg Castle - Germany.
373. *Hole Spin Qubits in Ge and Si Nanowires.* D. Loss. Invited talk. International Symposium on Quantum Computing and Quantum Optics, May 23-25, 2018, Hangzhou, China. Cancelled.
374. *Hole Spin Qubits in Ge and Si Nanowires.* D. Loss. Invited talk. 9th International Workshop on Solid State Quantum Computing (IWSSQC) Hangzhou Normal University (Hangzhou, China) from May. 25-28, 2018. Cancelled.
375. *Ge and Si nanowires: New Platforms for Spin and Majorana Qubits.* D. Loss. Invited plenary talk. 20th ICSNN (International Conference on Superlattices, Nanostructures and Nanodevices), Madrid (Spain), 23-27 July, 2018.
376. *Magnonic Quantum Hall Effect and Topological Insulators.* D. Loss. Invited talk. The Joint European Magnetic Symposia (JEMS) 2018, 3 - 7 September, 2018, Mainz, Germany.
377. *Hole Spin Qubits in Ge and Si Nanowires.* D. Loss. Invited talk. 4th School and Conference on Spin-Based Quantum Information Processing, 10-14 September 2018, Steigenberger Inselhotel, Konstanz (Germany).
378. *Ge and Si Nanowires: New Platforms for Spin and Majorana Qubits.* D. Loss. Plenary talk. 2nd European Conference on Molecular Spintronics (ECMOS2018) and the COST MolSpin Workshop Spins and Interfaces, Peniscola (Spain),

October 21-25, 2018.

379. *Ge and Si Nanowires: New Platforms for Spin and Majorana Qubits.* D. Loss. Invited talk. 74th Annual Meeting, The Physical Society of Japan March 14 - 17, 2019, Kyushu University, Fukuoka, Japan.
380. *Topological States and Proximity Effect (and possibly Parafermions).* D. Loss. Invited talk. 74th Annual Meeting, The Physical Society of Japan March 14 - 17, 2019, Kyushu University, Fukuoka, Japan.
381. *Application of quantum technologies: Spin Qubits and Relevance for Switzerland.* D. Loss. Invited talk. Workshop Quantum Technologies, organized by the Swiss Science Council SSC, 31 January 2019, Welle 7, Bern, Switzerland.
382. *Majorana and Andreev Bound States in Proximitized Rashba Quantum Wires.* D. Loss and D. Chevallier. Invited talk. MRS Spring Meeting, April 22-26, 2019, Phoenix, Arizona, USA.
383. *Magnon Transport and Magnonic Topolgical Insulators.* D. Loss. Invited talk. Quantum Spins at the Nanoscale: Recent Theoretical Advances, Ewha Womans University, May 27 - 30, 2019, Seoul, S. Korea.
384. *Majorana and Andreev Bound States in Proximitized Rashba Wires and Layers.* D. Loss. Invited talk. Frontiers in Quantum Information Physics and Technology, 10 June, 2019, Koshiba hall, University of Tokyo, Japan.
385. *Interplay of Superconductivity and Topological Materials.* Introduction and Discussion Leader: D. Loss. GRC on Topological and Correlated Matter 2019: New Materials and Structures in Topological and Correlated Systems, June 16 - 21, 2019, The Hong Kong University of Science and Technology Clear Water Bay, Kowloon, Hong Kong, China.
386. *Magnon Transport and Magnonic Topological Insulators.* D. Loss. Invited talk. Tenth International School and Conference on Spintronics and Quantum Information Technology (Spintech X), June 24-27, Chicago, USA.
387. *Magnon Transport and Magnonic Topological Insulators.* D. Loss. Invited talk. IBS Symposium: The World of Quantum Matter, Seoul National University, Seoul, S. Korea, July 22 23, 2019.
388. *Lecture I: Quantum computing based on spin qubits. Lecture II: Topological quantum devices and quantum computing.* D. Loss. Invited Lecturer. Summer School on Solid State Based Quantum Devices, August 25-28, Peking University, Beijing, China.
389. *Topological states in semiconductor nanowires.* D. Loss. Invited talk. International Workshop on Solid State Based Quantum Devices, August 29-30, 2019, Peking University, Beijing, China.
390. *Boundary Charges in Band Insulators.* D. Loss. Invited talk. Spins in a Quantum 1D Multi-particle Environment: from Exotic Phases and Non-trivial Topology to Protected Transport, 2-5 September, 2019, LMU Munich, Germany.
391. *Ge and Si Nanowires: New Platforms for Spin and Majorana Qubits.* D. Loss. Invited talk. IBS Conference on Quantum Nanoscience, Ewha Womens University, Seoul, S. Korea, 25-27 September, 2019.
392. *Majorana and Andreev Bound States in Proximitized Rashba Wires and Layers.* D. Loss. Invited talk. Conference on Signatures of Topology in Condensed Matter, ICTP, Trieste, Italy, 21-25 October 2019.
393. *Majorana and Andreev Bound States in Proximitized Rashba Wires and Layers.* D. Loss. Invited talk. Marching Towards Quantum Supremacy, November 13-15, 2019, PCTS Jadwin Hall, Princeton University, NJ, USA.
394. *Ge and Si Nanowires: New Platforms for Spin and Majorana Qubits.* D. Loss. Invited talk. Quantum simulations and quantum devices 2019, 18-24 November, 2019, Institute of Theoretical Physics, Chinese Academy of Science, Beijing, China.
395. *Majorana and Andreev Bound States in Proximitized Rashba Wires and Layers.* D. Loss. Invited talk. International Symposium on Frontier Issues in Quantum Physics and Quantum Information Sciences (QPQIS2019), hosted by Beijing Academy of Quantum Information Sciences (BAQIS) on November 25-26, 2019 in Beijing, China.
396. *Hole Spin Qubits in Si and Ge semiconductors.* D. Loss. Invited talk (online). 3rd RQC seminar, Oct. 13, 2021, RIKEN, Japan.
397. *Majorana Bound States Induced by Antiferromagnetic Skyrmion Textures.* D. Loss. Invited talk. Symposium N44: Topological Superconductivity in Engineered Heterostructures. APS March Meeting 2022, 3/16/2022, Chicago.
398. *Fractional Spin Phase and Majoranas in Spin Ladders.* D. Loss. Invited talk. New Frontiers: Interactions between Quantum Physics and Mathematics. June 20-23, 2022, American Academy of Arts and Sciences and Harvard University, Cambridge, USA.
399. *From Fractional Spin to Topological Magnons.* D. Loss. Invited talk. Quantum Nanoscience Institute, Ewha University, Seoul, June 28, 2022.
400. *Spin qubits in hole quantum dots.* D. Loss. Invited Keynote talk. International Conference on Quantum Computing(ICQC) 2022, Seoul, June 29, 2022.
401. *Spin qubits in hole quantum dots.* D. Loss. Invited talk (online). International Symposium on Frontier Issues in Quantum Physics and Quantum Information Sciences (QPQIS2022), Beijing Academy of Quantum Information Sciences (BAQIS), September, 2022, Beijing.
402. *Spin qubits in hole quantum dots.* D. Loss. Invited talk (online). Quantum Africa 6 (QA6): Sixth Edition of the Quantum Africa (QA) Conference Series Kigali, Rwanda, 12-16 September 2022.
403. *From Fractional Spin to Topological Magnons.* D. Loss. Invited talk. Workshop on 'Cavity Control of Quantum Matter' at College de France, Paris, October 17-18, 2022.
404. Invited Speaker and session chair. First Swiss-US Quantum Days, David Rubenstein Forum at the University of Chicago, Chicago, Oct 19-21, 2022.

405. *Majorana quo vadis?* D. Loss. Invited symposium participant. University of Cologne, February 23-25, 2023.
406. *Spin qubits in hole quantum dots.* D. Loss. Invited talk. Hybrid quantum technologies workshop 2023 and Germanium day, April 3-6, 2023, IST, Klosterneuburg, Austria.
407. *Spin Qubits in Semiconductors for Scalable Quantum Computers.* D. Loss. Plenary talk. Quantum Matter International Conference 2023, May 23-25, 2023, Madrid, Spain.
408. *Superconducting Spin Qubits.* D. Loss. Invited talk. Workshop on Unconventional superconducting phenomena, May 30-June 6, 2023, Schloss Ringberg, Conference site of the Max Planck Society, Kreuth, Germany.
409. *Spin qubits in hole quantum dots.* D. Loss. Invited talk. IEEE-NANO 2023, July 2-5, 2023, Jeju Island, Korea.
410. *From Fractional Spin to Spin Quantum Hall Effect.* D. Loss. Invited talk. Quantum Phenomena in 2D Matter (QP2DM), July 17-21, 2023, San Sebastian, Spain.
411. *Superconducting (Andreev) Spin Qubits.* D. Loss. Invited talk. NYU Quantum Summit, October 9-10, 2023, New York, USA.
412. *Spin Qubits in Semiconductors for Scalable Quantum Computers.* D. Loss. Invited talk. CESQ scientific inauguration event on October 17, 2023, ISIS, Strasbourg, France.
413. *Spin Qubits in Semiconductors for Scalable Quantum Computers.* D. Loss. Invited talk. QPQIS 2023 conference, Beijing Academy of Quantum Information Sciences (BAQIS), October 18-23, 2023, Beijing, China.
414. *Superconducting (Andreev) Spin Qubits.* D. Loss. Invited talk. New Horizons in Condensed Matter Physics 2023, Inauguration of The Anthony J Leggett Institute for Condensed Matter Theory, November 3-5, 2023, Urbana, USA.
415. *TBA* D. Loss. Plenary talk. International Conference on the Physics of Semiconductors (ICPS) 2024, Foundation of Quantum Technology, July 28 to August 2, 2024, Shaw Centre, Ottawa, Canada.
416. *TBA* D. Loss. Invited talk. Spin Qubit 6: The 6th International Conference on Spin-Based Quantum Information Processing, 4-8 November 2024, Sydney, Australia.

More than 240 invited seminars and colloquia at universities and research institutions worldwide.

3. Other Contributions

Co-organizer of the ITP workshop *Quantum Computers and Quantum Phases* at the Institute for Theoretical Physics, University of California at Santa Barbara, July-December 1996, together with D. Awschalom, Ch. Bennett, D. DiVincenzo (coordinator), C. Caves, S. Lloyd, and W. Zurek (coordinator).

Co-organizer with D. Awschalom of International Quantum Information Science Workshop, Innsbruck, Austria, May 28 -31, 2002.

Organizer of DARPA/NCCR Mini Workshop on spin based quantum computing, Feb. 13-16, 2003, Hotel "Guarda Val", Sporz 7078 Lenzerheide, Switzerland.

1998-2012: External Faculty member at the *Center for Spintronics and Quantum Computation*, University of California, Santa Barbara, USA;

Since Nov. 2003, external member of Center for ""Quantum systems and information technology" "(QSIT), ETH Zurich, Switzerland; http://www.qsit.ethz.ch/

Since Aug. 2004: External Participant at the *Nanoscale Science and Engineering Center (NSEC)*, Harvard University, Boston, USA; http://www.nsec.harvard.edu/

Organizer of symposium on *Modern Aspects of Quantum Mechanics*, at the Spring meeting of the Swiss Physical Society, February, 1999, Bern, CH.

Chair for the mini-colloquium on MESOSCOPIC MAGNETS, SPIN TRANSPORT AND TUNNELING, (afternoon session) at the 18th EPS (European Physical Society) meeting, Montreux, Switzerland, March 13–17, 2000, jointly with the Japanese and the Swiss Physical Societies.

Co-organizer of the Aspen workshop on "Spins in Nanostructures", Aspen Center for Physics, Aspen, CO, USA, July 30 - August 17, 2001; together with B. Jones (IBM Almaden) and D. Ralph (Cornell University).

Director (with Prof. C. Egues) of International Workshop on Spintronics and Spin-based quantum information processing, International Center for Condensed Matter Physics (http://iccmp.unb.br/indexen.html) of the University of Brasilia, at Braslia, Brazil, July 4-8, 2005.

Co-organizer of the KITP workshop Spintronics, March 13 - June 23, 2006, KITP Santa Barbara, CA, USA, see http://www.kitp.ucsb.edu/activities/auto2/?id=349. Together with: D. Awschalom, G. Bauer, M. Flatte, A. MacDonald, D. Ralph.

Since 1999 reviewer for the German Science Foundation (DFG) for various programs (Priority program on QHE, 1999; Cooperative Research Center 631 (Munich area), 2003 and Feb. 8-9, 2007; Priority program on Semiconductor Spintronics SPP 1285/1, Dec. 13-15, 2006). Special reviewer for the Humboldt Foundation.

Reviewer for the Austrian Science Foundation for various programs. Jan. 2005, member of the review panel for the SFB F015 "Control and Measurement of Quantum Optics", University of Innsbruck, Austria. Reviewer for the Vienna Graduate School proposal, Oct. 2006, Vienna.

Referee for various research propropsal and program reviewer for the EC research commission, since 1999.

Since 2001 founding member and member of the Scientific Board of the National Center of Competence on Nanoscience (NCCR), University of Basel, Switzerland; Since May 2006 co-director of NCCR;
http://www.nanoscience.unibas.ch. Leader of the Module on Quantum Computing and Quantum Coherence.

Member of the Editorial Board of the Virtual Journal of Nanoscale Science and Technology, since January 2000.

"Semiconductor Spintronics and Quantum Computation", eds. D.D. Awschalom, D. Loss, and N. Samarth, Series on Nanoscience and Technology, Springer, Berlin, June 2002. ISBN 3-540-42176-9

Coeditor of Europhysics Letters, March 2001- Sept. 2004.

Advisory Editor of Europhysics Letters, Oct. 2004.

Editorial Board Member of Journal of Nanotechnology (IOP), 2005-2008.

Panel member and invited speaker of the DARPA Quantum Information Science and Technology (QuIST) Program at a special Workshop on exploring the possibilities of solid-state qubit implementations for quantum information processing, 25-26 June, 2003, Beverly Hills, CA 90210, USA.

Member of Evaluation Panel 'Solid state quantum information processing' (FOM) 7-8 September 2003, Delft, The Netherlands.

Chair of Evaluation Panel on "LMUinnovativ-Zukunft in Forschung" with the task to identify innovative research directions at the Ludwig-Maximilians University Munich, Germany, July 17-18, 2005.

Member of the review panel concerning the draft proposals for a Cluster of Excellence respectively a Graduate School in the field of "Condensed Matter Sciences" in Germany. Organized by the DFG. November 29-30, 2005, Frankfurt, Germany.

Member of the review panel for the program 'Cluster of Excellence' in the field of "Condensed Matter Sciences" in Germany. Organized by the DFG. June 25-27, 2006, Bonn, Germany.

Member of the review panel concerning the draft proposals for a Cluster of Excellence respectively a Graduate School in the field of "Condensed Matter Sciences" in Germany (second call). Organized by the DFG. November 29-30, 2006, Frankfurt, Germany.

Co-organizer of the ICTP *Workshop on Quantum Phenomena and Information: From Atomic to Mesoscopic Systems.* ICTP, Trieste, Italy, May 5-16, 2008.

Organizer of FNST 08: Frontiers in Nanoscale Science and Technology: A workshop on Nanoelectronics and Nanophotonics Quantum Information Processing. Organized jointly by Basel Center for Quantum Computing and Quantum Coherence and Nanoscale Science and Engineering Center based at Harvard. University of Basel, Switzerland, January 6-8, 2008.

Organizer and moderator of the *QUROPE Panel Session on European QIPC Research in the International Context.*. Panel members: C. Marcus, S. Tarucha, D. Berkeland, and R. Laflamme. QIPC Cluster Review Meeting (FET QIPC Proactive Initiative), Paris, March 5, 2008.

Co-organizer of Saturday Morning Physics 2008, Dept. Physik, Uni Basel. Vortrag: Quantenphysik, Schroedingers Katze und Quantencomputer; Samstag, 23.02.2008.

Co-organizer of the KITP workshop on Quantum Information Science to run for three months, from September 14 to December 11, 2009. KITP Santa Barbara, CA, USA.

Session Chair at the 24th Solvay conference on 'Quantum Theory of Condensed Matter', 2008. Brussels, Belgium, 11-13 October 2008; www.solvayinstitutes.be/

Member of the Assessment Committee on Quantum-Phase Electronics Center (QPEC), School of Engineering, The University of Tokyo, Nov. 20, 2008, Tokyo, Japan.

Member of the selection committee for the King Faisal International Prize in Physics 2009. King Faisal Foundation Headquarters in Riyadh, Saudi Arabia, Saturday 24 January to Monday 26 January 2009.

Co-Chair of Spintech5 - Krakow 2009. Fifth International School and Conference on Spintronics and Quantum Information Technology, 7-11 July, Krakow, Poland.

Member of the Review panel, SPP 1459, "Graphene", for the DFG, January 21-22, 2010, Bad Honnef, Germany.

Member of 'Begutachtung zur BMBF-Bekanntmachung "Quantenkommunikation"'; June 15, 2010, Bonn, Germany.

Co-Chair and Co-Organizer of International School and Conference on Spin-Based Quantum Information Processing, August 16-20, 2010, Konstanz, Germany.

Co-Chair and Co-Organizer of ESF Q-Spice Workshop on Spintronics, October 17 -21, 2010, Maratea, Italy.

Co-Chair and Co-Organizer of 2nd ESF Q-Spice Workshop on Spintronics, October 17 -21, 2011, Sardinia, Italy.

Member of the review panel (P1 "Natural Sciences") for the Excellence Initiative of the German Research Foundation, 10. - 11. Jan. 2011, Bonn, Germany.

Member of the panel on Bewertung des Zukunftskonzeptes der LMU Mnchen, led by the President of LMU, Jan. 25-26, 2011, Munich, Germany.

Panel member of Foresight Planning Exercise of CIFARs Quantum Physics Programs, Intercontinental Hotel, 220 Bloor Street West, Toronto, Canada, 24-25 June, 2012.

Organising Committee member of The 6th Windsor Summer School Low-Dimensional Materials, Strong Correlations, and Quantum Technologies. Cumberland Lodge, Great Park, Windsor, UK, 14-26 August 2012.

Since Jan. 2013, Advisory Board for NIM, LMU Munich, Germany.

Member of evaluation committee of Department of Physics, TU Darmstadt, Feb. 25 -27, 2013.

Since 2012 Principal Investigator of Quantum System Theory Research Team, Center for Emergent Matter Science (CEMS), RIKEN, Wako (Tokyo), Japan.

Since 2015 Member of the ERC Advanced Grants evaluation panel.

Member of numerous Advisory Boards for international conferences.

Refereeing for major scientific Journals (Nature, Science, Nature Nano, Nature Physics, Nature Materials, PRL, PRB/A, EPL, J. Phys., J. Stat. Phys., Solid States Comm., Physica, Phys. Lett., Nanotechnology, Nano Letters, etc.)
External Referee of research grant proposals for: US NSF, Dutch Science Foundation, NSERC of Canada, Israel NSF, US NSF, Swiss NSF, Swedish NSF, EU Science Foundation.

Stellvertrendes Mitglied des Stiftungsrates des Schweizerischen Nationalfonds (Amtsperiode 1999-2001).
Member/Chairman of various search committees in- and outside of Basel (Physics, Bioinformatics, Mathematics).

Co-Chair and Co-Organizer of the 2nd School and Conference on spin-based quantum information processing (Spin Qubit 2), Konstanz, Germany, August 18-21, 2014.

Since 2014 Nature Partner Journal Quantum Information (Advisory Board).

Chair of Spintech 8 - Basel 2015. 8th International School and Conference on Spintronics and Quantum Information Technology, August 10-14, 2015, Basel.

Coorganizer of the International Workshop on Spin Coherence and Topological Order in Semiconductor Nanosystems (with S. Chesi). Beijing Computational Science Research Center (CSRC), November 2-4, 2016, Beijing, China.

Coorganizer of International Workshop 'Frontiers in Quantum Materials and Devices' (with B. Westervelt and V. Golovach). Dates: 12/07/2017 - 14/07/2017, Miramar Palace, Donostia, San Sebastin, Spain.

Chair and Co-Organizer of 'Quantum Designer Physics 2018'. An international workshop held at the Miramar Royal Palace in Donostia / San Sebastian on July 16-19, 2018.

Co-Chair and Co-Organizer of the 4th School and Conference on spin-based quantum information processing (Spin Qubit 4), Konstanz, Germany, September, 2018.

Panel Member of Aalto University Research, Art and Impact Assessment Exercise 2018. Helsinki, 26-31 August, 2018.

Member of Assessment Panel of QuTech, Delft University of Technology, Netherlands; January 2019.

Since 2018, Advisory Board of Quantum Nanoscience, Institute for Basic Science, Ewha Womans University, Seoul, South Korea.

Chair and Co-Organizer of 'Quantum Designer Physics 2019'. An international workshop held at the Miramar Royal Palace in Donostia / San Sebastian on July 1-4, 2019.

Chair and Co-Organizer of the 5th School and Conference on spin-based quantum information processing (Spin Qubit 5), Pontresina, Switzerland, September 1-5, 2022.

2021-Feb. 2022, Chair of the International Advisory Board of the Russian Quantum Center.

Member of 2nd Assessment Panel of QuTech, Delft University of Technology, Netherlands; April 2022.

Chair and Co-Organizer of 'Quantum Designer Physics 2022'. An international workshop held at the Miramar Royal Palace in Donostia / San Sebastian on July 18-23, 2022.

Chair and Co-Organizer (with David Awschalom) of 'US-Switzerland Quantum Symposium', uptownBasel Infinity, March 26-28, 2023.

Chair and Co-Organizer of 'Global Quantum Symposium', QuantumBasel, March 18-20, 2024.

Scientific Co-chair (with Yasu Nakamura) of 'Swiss-Japanese Quantum Symposium 2024', organized by the Swiss Embassy (Swissnex) in Tokyo, June 5-7, 2024, University of Tokyo, Japan.

Chair and Co-Organizer of 'Quantum Designer Physics 2024'. An international workshop held at the Miramar Royal Palace in Donostia / San Sebastian on July 15-19, 2024.

International Patents
Fermionic Bell-state analyzer and quantum computer using same:
United States Patent, Loss et al.; Patent No.: US 7,781,754 B2;
Date of Patent: Aug. 24, 2010; Inventors: Daniel Loss; Hans-Andreas Engel.