

## List of Publications

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### Articles in Refereed Journals

72. J.-W. Ryu, N. Myoung, M. Hentschel, and H. C. Park, *Nonorientability-induced  $PT$  phase transition in ladder lattices*, Phys. Rev. A **103**, 042207(1-8) (2021).
71. M. Bosch, A. Behrens, S. Sinzinger, and Martina Hentschel, *Husimi functions for coupled optical resonators*, J. Opt. Soc. Am. A **38**, 573-578 (2021).
70. J. Kreismann and M. Hentschel, *Spin-orbit interaction of light in three-dimensional microcavities*, Phys. Rev. A **102**, 043524(1-13) (2020).
69. A. Behrens, M. Bosch, P. Fesser, M. Hentschel, and S. Sinzinger, *Fabrication and characterization of deformed microdisk cavities in silicon dioxide with high  $Q$ -factor*, Appl. Opt. **59**, 7893(1-7) (2020).
68. S. Luhn and M. Hentschel, *Analytical Fresnel laws at generic curved interfaces*, J. Opt. **22**, 015605(1-6) (2020).
67. M. Bosch, S. Malzard, M. Hentschel, and H. Schomerus, *Non-Hermitian defect states from lifetime differences*, Phys. Rev. A **100**, 063801(1-7) (2019).
66. J. Kreismann, J. Kim, M. Bosch, M. Hein, S. Sinzinger, and M. Hentschel, *Super-directional light emission and emission reversal from micro cavity arrays*, Phys. Rev. Res. **1**, 033171(1-5) and 033171s(1-7) (2019).
65. C.-H. Yi, J. Kullig, M. Hentschel, and J. Wiersig, *Non-Hermitian degeneracies of internal-external mode pairs in dielectric microdisks*, Photonics Research **7**, 464-472 (2019).
64. J. Kullig, C.-H. Yi, M. Hentschel, and J. Wiersig, *Exceptional points of third-order in a layered optical microdisk cavity*, New J. Phys. **20**, 083016(1-10) (2018).
63. J. M. Köhler, D. Kuhfuß, P. Witthöft, M. Hentschel, and A. Knauer, *Single-photon-single-electron transition for interpretation of optical spectra of nonspherical metal nanoparticles in aqueous colloidal solutions*, Journal of Nanomaterials **2018**, 1781389(1-8) (2018).
62. J. Kreismann and M. Hentschel, *The optical Möbius strip cavity: Tailoring geometric phases and far fields*, Europhys. Lett. **121**, 24001(1-6) (2018).
61. P. Stockschröder and M. Hentschel, *Consequences of a wave-correction extended ray dynamics for integrable and chaotic optical microcavities*, J. Opt. **19**, 125603(1-13) (2017).
60. J. Kreismann, S. Sinzinger, and M. Hentschel, *Three-dimensional limaçon: Properties and applications*, Phys. Rev. A **95**, 011801(R)(1-6) (2017).
59. P. Stockschröder, J. Kreismann, and M. Hentschel, *Ray picture and ray-wave correspondence in triangular microlasers*, J. Opt. **18**, 125605(1-7) (2016).
58. J.-B. Shim, P. Schlagheck, M. Hentschel, and J. Wiersig, *Nonlinear dynamical tunneling of optical whispering gallery modes in the presence of a Kerr nonlinearity*, Phys. Rev. A **94**, 053849(1-8) (2016).

57. L. B. Ma, S. L. Li, V. M. Fomin, M. Hentschel, J. B. Götze, Y. Yin, M. R. Jorgensen, and O. G. Schmidt, *Spin-orbit coupling of light in asymmetric microcavities*, Nature Comm. **7**, 10983(1-6) and 10983\_s1(1-9) (2016).
56. P. Stockschröder, J. Kreismann, and M. Hentschel, *Curvature dependence of semiclassical corrections to ray optics: How Goos-Hänchen shift and Fresnel filtering deviate from the planar case result*, Europhys. Lett. **107**, 64001(1-5) (2014).
55. J.-W. Ryu, S.-Y. Lee, I. Kim, M. Choi, M. Hentschel, and S. W. Kim, *Abnormal high-Q modes of coupled stadium-shaped microcavities*, Opt. Lett. **39**, 4196(1-4) (2014).
54. M. Hentschel and G. Röder, *The mesoscopic X-ray edge problem: Boundary effects enhance photoabsorption in quantum dots*, Eur. Phys. J. B **87**, 12(1-6) (2014).  
This article was chosen for the May 2014 *Advances in Engineering*, an online journal featuring latest engineering research, see <http://advanceseng.com/applied-physics/mesoscopic-x-ray-edge-problem-boundary-effects-enhance-photoabsorption-quantum-dots/>.
53. T.-Y. Kwon, S.-Y. Lee, J.-W. Ryu, and M. Hentschel, *Phase-space analysis of lasing modes in a chaotic microcavity*, Phys. Rev. A **88**, 023855(1-7) (2013).
52. D. Kotik and M. Hentschel, *How curvature affects the far-field emission from deformed optical microcavities*, J. Opt. **15**, 014010(1-6) (2013).
51. J. B. Götze, S. Shinohara, and M. Hentschel, *Are Fresnel filtering and the angular Goos-Hänchen shift the same?*, J. Opt. **15**, 014009(1-8) (2013).
50. G. Tkachov and M. Hentschel, *Diffusion on edges of insulating graphene with intravalley and intervalley scattering*, Phys. Rev. B **86**, 205414(1-7) (2012).
49. J.-W. Ryu, M. Hentschel, and S.-W. Kim, *Quasiattractors in coupled maps and coupled dielectric cavities*, Phys. Rev. E **85**, 056213(1-6) (2012).
48. M. Hentschel, *Billards für Licht*, Physik Journal **10**, 39-43 (2011).  
Prize winner article: Hertha-Sponer-Preis of the German Physical Society. Article in German.
47. J. Wiersig, A. Eberspacher, J.-B. Shim, J.-W. Ryu, S. Shinohara, M. Hentschel, and H. Schome-rus, *Nonorthogonal pairs of copropagating optical modes in deformed microdisk cavities*, Phys. Rev. A **84**, 023845(1-10) (2011).
46. G. Röder, G. Tkachov, and M. Hentschel, *Photoabsorption spectra and the X-ray edge problem in graphene*, Europhys. Lett. **94**, 67002(1-6) (2011).
45. S. Shinohara, T. Harayama, T. Fukushima, M. Hentschel, S. Sunada, and E. E. Narimanov, *Chaos-assisted emission from asymmetric resonant cavity microlasers*, Phys. Rev. A **83**, 053837(1-8) (2011).
44. J.-W. Ryu and M. Hentschel, *Designing coupled microcavity lasers for high-Q modes with uni-directional light emission*, Opt. Lett. **36**, 1116-1118 (2011).
43. J. Unterhinninghofen, U. Kuhl, J. Wiersig, H.-J. Stöckmann, and M. Hentschel, *Measurement of the Goos-Hänchen shift in a microwave cavity*, New J. Phys. **13**, 023013(1-11) (2011).
42. S. Bandopadhyay and M. Hentschel, *Modified Anderson orthogonality catastrophe power law in the presence of shell structure*, Phys. Rev. B **83**, 035303(1-13) (2011).
41. J. Haase, H. Fröb, V. G. Lyssenko, K. Leo, S. Shinohara, M. Hentschel, P. Mundra and A. Eychmüller, *Hemispherical resonators with embedded nanocrystal quantum dot emitters*, Appl. Phys. Lett. **97**, 211101(1-3) (2010).

40. G. Röder and M. Hentschel, *Orthogonality catastrophe in ballistic quantum dots: Role of level degeneracies and confinement geometry*, Phys. Rev. B **82**, 125312(1-10) (2010).
39. J.-W. Ryu and M. Hentschel, *Ray model and ray-wave correspondence in coupled optical microdisks*, Phys. Rev. A **82**, 033824(1-8) (2010).
38. M. Hentschel, Q. J. Wang, C. Yan, F. Capasso, T. Edamura, and H. Kan, *Emission properties of electrically pumped triangular shaped microlasers*, Optics Express **18**, 16437-16442 (2010).
37. R. Bedrich, S. Burdin, and M. Hentschel, *The Mesoscopic Kondo Box: A Mean-Field Approach*, Phys. Rev. B **81**, 174406(1-5) (2010).
36. S. Shinohara, T. Harayama, T. Fukushima, M. Hentschel, T. Sasaki, and E. E. Narimanov, *Chaos-assisted directional light emission from microcavity lasers*, Phys. Rev. Lett. **104**, 163902(1-4) (2010).  
This article was featured by A. D. Stone in the News & Views section, Nature **465**, 696-697 (2010).
35. J. Wiersig, J. Unterhinninghofen, H. Schomerus, U. Peschel, and M. Hentschel, *Electromagnetic modes in cavities made of negative-index metamaterials*, Phys. Rev. A **81**, 023809(1-7) (2010).
34. S. Shinohara, M. Hentschel, J. Wiersig, T. Sasaki, and T. Harayama, *Ray-wave correspondence in Limaçon-shaped semiconductor microcavities*, Phys. Rev. A **80**, 031801R(1-4) (2009).
33. Q. J. Wang, C. Yan, L. Diehl, M. Hentschel, J. Wiersig, N. Yu, C. Pflügl, M. A. Belkin, T. Edamura, M. Yamanishi, H. Kan, and F. Capasso, *Deformed microcavity quantum cascade lasers with directional emission*, New J. Phys. **11**, 125018 (1-17) (2009).
32. J.-B. Shim, M. S. Hussein, and M. Hentschel, *Numerical Test of Born-Oppenheimer Approximation in Chaotic Systems*, Phys. Lett. A **373**, 3536-3540 (2009).
31. G. Tkachov and M. Hentschel, *Spin-orbit coupling, edge states and quantum spin Hall criticality due to Dirac fermion confinement: The case study of graphene*, Eur. Phys. J. B **69**, 499-504 (2009).
30. C. Yan, Q. J. Wang, L. Diehl, M. Hentschel, J. Wiersig, N. Yu, C. Pflügl, M. A. Belkin, T. Edamura, M. Yamanishi, H. Kan, and F. Capasso, *Directional emission and universal far-field behavior from semiconductor lasers with Limaçon-shaped microcavity*, Appl. Phys. Lett. **94**, 251101(1-3) (2009).
29. M. Hentschel, T.-Y. Kwon, M. A. Belkin, R. Audet, and F. Capasso, *Angular emission of quantum cascade spiral microlasers*, Optics Express **17**, 10335(1-9) (2009).
28. A. Bäcker, R. Ketzmerick, S. Löck, J. Wiersig, and M. Hentschel, *Quality factors and dynamical tunneling in annular microcavities*, Phys. Rev. A **79**, 063804(1-6) (2009).
27. G. Tkachov and M. Hentschel, *Coupling between chirality and pseudospin of Dirac fermions: Non-analytical particle-hole asymmetry and a proposal for a tunneling device*, Phys. Rev. B **79**, 195422(1-8) (2009).
26. M. Hentschel and T.-Y. Kwon, *Designing and understanding directional emission from spiral microlasers*, Opt. Lett. **34**, 163-165 (2009).  
This article was featured in press releases and in the member magazine of OSA, Optics and Photonics News **20**, issue 4, page 9 (2009).
25. M. Hentschel, *Optical microcavities as quantum-chaotic model systems: Openness makes the difference*, Adv. Sol. St. Phys. **48**, 293-304 (2009).
24. J. Wiersig, S. W. Kim, and M. Hentschel, *Asymmetric scattering and non-orthogonal mode patterns in passive optical micro-spirals*, Phys. Rev. A **78**, 053809(1-8) (2008).

23. E. G. Altmann, G. Del Magno, and M. Hentschel, *Non-Hamiltonian dynamics in optical microcavities resulting from wave-inspired corrections to geometric optics*, Europhys. Lett. **84**, 10008(1-6) (2008).
22. J. Unterhinninghofen, J. Wiersig, and M. Hentschel, *Goos-Hänchen shift and localized modes in optical microcavities*, Phys. Rev. E **78**, 016201(1-8) (2008).
21. J. Wiersig and M. Hentschel, *Combining unidirectional light output and ultralow loss in deformed microdisks*, Phys. Rev. Lett. **100**, 033901(1-4) (2008).
20. M. Hentschel, D. Ullmo, and H. U. Baranger, *Fermi-edge singularities in the mesoscopic regime: Photo-absorption spectra*, Phys. Rev. B **76**, 245419(1-16) (2007).
19. M. Hentschel, D. C. B. Valente, E. R. Mucciolo, and H. U. Baranger, *Improving intrinsic decoherence in multi-quantum-dot charge qubits*, Phys. Rev. B **76**, 235309(1-12) (2007).
18. M. Hentschel and F. Guinea, *Orthogonality catastrophe and Kondo effect in graphene*, Phys. Rev. B **76**, 115407(1-7) (2007).
17. T. Tanaka, M. Hentschel, T. Fukushima, and T. Harayama, *Classical phase space revealed by coherent light*, Phys. Rev. Lett. **98**, 033902(1-4) (2007).
16. M. Hentschel, G. Röder, and D. Ullmo, *Many-body effects in the mesoscopic x-ray edge problem*, Prog. Theor. Phys. Suppl. **166**, 143-151 (2007).
15. J. Wiersig and M. Hentschel, *Unidirectional light emission from high-Q modes in optical microcavities*, Phys. Rev. A **73**, 031802R(1-4) (2006).
14. H. Schomerus and M. Hentschel, *Correcting ray optics at curved dielectric microresonator interfaces: Phase-space unification of Fresnel filtering and the Goos-Hänchen shift*, Phys. Rev. Lett. **96**, 243903(1-4) (2006).
13. M. Hentschel, D. Ullmo, and H. U. Baranger, *Fermi-edge singularities in the mesoscopic regime: Anderson orthogonality catastrophe*, Phys. Rev. B **72**, 035310(1-11) (2005).
12. M. Hentschel, D. Ullmo, and H. U. Baranger, *Fermi-edge singularities in the mesoscopic x-ray edge problem*, Phys. Rev. Lett. **93**, 176807(1-4) (2004).
11. H. Schomerus, J. Wiersig, and M. Hentschel, *Optomechanical probes of resonances in amplifying microresonators*, Phys. Rev. A **70**, 012703(1-8) (2004).
10. D. Frustaglia, M. Hentschel, and K. Richter, *Aharonov-Bohm physics with spin II: Spin-flip effects in two-dimensional ballistic systems*, Phys. Rev. B **69**, 155327(1-11) (2004).
9. M. Hentschel, H. Schomerus, D. Frustaglia, and K. Richter, *Aharonov-Bohm physics with spin I: Geometric phases in one-dimensional ballistic rings*, Phys. Rev. B **69**, 155326(1-14) (2004).
8. M. Hentschel, H. Schomerus, and R. Schubert, *Husimi functions at dielectric interfaces: Inside-outside duality for optical systems and beyond*, Europhys. Lett. **62**, 636-642 (2003).
7. M. Hentschel and K. Richter, *Quantum chaos in optical systems: The annular billiard*, Phys. Rev. E **66**, 056207(1-13) (2002).
6. M. Hentschel and H. Schomerus, *Fresnel laws at curved dielectric interfaces of microresonators*, Phys. Rev. E **65**, 045603(R)(1-4) (2002).
5. D. Frustaglia, M. Hentschel, and K. Richter, *Quantum transport in nonuniform magnetic fields: Aharonov-Bohm ring as a spin switch*, Phys. Rev. Lett. **87**, 256602(1-4) (2001).

4. M. Hentschel and M. Vojta, *Multiple beam interference in a quadrupolar glass fiber*, Opt. Lett. **26**, 1764-1766 (2001).
3. M. Hentschel, M. Bobeth, G. Diener, and W. Pompe, *On the short-time compositional stability of periodic multilayers*, Thin Solid Films **354**, 267-275 (1999).
2. B. Kämpfer, O. P. Pavlenko, A. Peshier, M. Hentschel, and G. Soff, *Thermal open charm signals versus hard initial yields in ultrarelativistic heavy-ion collisions*, J. Phys. G **23**, 2001-2011 (1997).
1. M. Hentschel, B. Kämpfer, O. P. Pavlenko, K. Redlich, and G. Soff, *Diphoton rates from thermalized matter resulting in ultrarelativistic heavy-ion collisions*, Z. Phys. C **75**, 333-339 (1997).

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### Review Articles, Refereed Conference Proceedings and Book Chapters

19. S. Sinzinger, M. Hentschel, *Resonant microoptics for enhanced computational imaging and sensing solutions*, Imaging Optics Conference, Vancouver (2020).
18. M. Hentschel, *Quantenchaos*, in: Vielfältige Physik (Editors: C. Denz, A. Bossmann, and D. Duchardt), Springer (2019). **Book chapter.**
17. A. Behrens, P. Fesser, S. Sinzinger, J. Kreismann, M. Hentschel, *Mesoskopische Flüstergaleriemodenresonatoren im sichtbaren Spektrum auf Basis von Silizium Mikrostrukturierung*, Proceedings, MST- Kongress Berlin , Germany (2019).
16. J. Kreismann, A. Behrens, Ch. Weigel, S. Sinzinger, M. Hentschel, L. Yang, *Mesoscopic Optics*, Proceedings, GMM-Workshop on Micro-Nano-Integration (Dortmund, Germany ) (2018).
15. M. Hentschel, *Chaotic Microlasers*, refereed Scholarpedia Article (2015): [www.scholarpedia.org/article/Chaotic\\_microlasers](http://www.scholarpedia.org/article/Chaotic_microlasers). **Review article on Scholarpedia.**
14. J. Kreismann, K. Kubo, P. Stockschröder, and M. Hentschel, *Directional emission from chaotic microdisk lasers and the role of boundary imperfections*, Proceedings PIERS 2015 (Prague, Czech Republic), pp. 1637–1641 (2015).
13. P. Stockschröder, J. Kreismann, and M. Hentschel, *Wave-inspired corrections for an efficient ray-optical description of micro-optics devices*, Proceedings PIERS 2015 (Prague, Czech Republic), pp. 1647–1651 (2015).
12. J. B. Götte, M. Hentschel, and W. Löffler, *Beyond catoprics*, Preface by the Guest Editors for the Special Issue on *Beam Shifts*, J. Opt. **15**, 010301 (2013).
11. J. Wiersig, J. Unterhinninghofen, Q. Song, H. Cao, M. Hentschel, and S. Shinohara, *Review on unidirectional light emission from ultralow-loss modes in deformed microdisks*, in: Trends in Nano- and Micro-Cavities (Editors: O'Dae Kwon, Byoungcho Lee, Kyungwon An), Bentham Science Publishers Ltd., pp. 109-152 (2011). **Review article.**
10. M. Hentschel and T.-Y. Kwon, *Optical microcavities of spiral shape: From quantum chaos to directed laser emission*, in: Complex phenomena in nanoscale systems, Springer NATO Science for Peace and Security Series (Editors: G. Casati and D. Matrasulov), Springer, Berlin, pp. 15-24 (2009). **Book chapter.**
9. T.-Y. Kwon, J. Wiersig, and M. Hentschel, *Directional light output from a circular microdisk laser*, in: ICTON 2007 – 9th International Conference on Transparent and Optical Networks, IEEE (New York), Transparent Optical Networks 2007 **4**, 194-196 (2007).

8. J. Wiersig, C. Gies, M. Lorke, F. Jahnke, and M. Hentschel, *Avoided resonance crossings and photon statistics in semiconductor microcavity lasers*, CLEO/Pacific Rim 2007 – Conference on Lasers and Electro-Optics, DOI 10.1109/CLEOPR.2007.4391548, pp. 1-2 (2007).
7. T. Tanaka, M. Hentschel, T. Fukushima, and T. Harayama, *Directional emission patterns from the oval-billiard microcavity laser diodes*, in: ICTON 2006 – 8th International Conference on Transparent and Optical Networks, IEEE (New York), Transparent Optical Networks 2006 **4**, 121-123 (2006).
6. M. Hentschel and J. U. Nöckel, *The sequential reflection model in deformed dielectric cavities*, in: Quantum Optics of Small Structures (Editors: D. Lenstra, T.D. Visser, K.A.H. van Leeuwen), Edita KNAW Amsterdam, pp. 217-233 (2000). **Book chapter.**
5. M. Bobeth, M. Hentschel, G. Diener, W. Pompe, and A. Ullrich, *Theoretical investigation of the thermal stability of nanoscale layered systems*, Mater. Sci. Forum **294-296**, 613-616 (1999).
4. M. Hentschel, M. Bobeth, G. Diener, and W. Pompe, *Theoretical analysis of the evolution of composition profiles in nanoscale multilayers*, Mater. Sci. Forum **287-288**, 473-476 (1998).
3. B. Kämpfer, O. P. Pavlenko, A. Peshier, M. Hentschel, and G. Soff, *Electromagnetic and charmed probes of deconfined matter*, in: Proceedings of International Workshop XXV on Gross Properties of Nuclei and Nuclear Excitations, Hirschegg, pp. 97-104 (1997).
2. B. Kämpfer, A. Peshier, M. Hentschel, G. Soff, and O. P. Pavlenko, *Electromagnetic signals from deconfined matter resulting from ultrarelativistic heavy-ion collisions*, in: Structure of vacuum & Elementary matter (Editors: H. Stöcker, A. Gallmann, J. H. Hamilton), World Scientific Singapore, pp. 483-490 (1997). **Book chapter.**
1. B. Kämpfer, O. P. Pavlenko, A. Peshier, M. Hentschel, and G. Soff, *Estimates of dilepton and photon yields from deconfined matter produced in ultrarelativistic heavy-ion collisions*, in: Advances in Nuclear Dynamics (Editors: W. Bauer and G. Westfall), Plenum Press New York, pp. 285-290 (1996). **Book chapter.**

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## Theses

1. M. Hentschel, "‘Mesoscopic wave phenomena in electronic and optical ring structures’", PhD thesis, MIPPKS Dresden and Technical University of Dresden, 2001.
2. M. Hentschel, "‘Diphotonenproduktion in ultrarelativistischen Schwerionenstößen’", Diploma thesis, Technical University of Dresden, 1997.

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## Patents

1. H. Heidrich, M. Hentschel, D. G. Rabus, M. Hamacher, and K. Richter, "‘Monolithisch integrierter Mikrolaser mit einem nur eine Spiegelebene aufweisenden Zirkularresonator’", Patent application filed at 3rd of July, 2001 under filing number DE 101 32 479.0 (Deutsches Patent- und Markenamt, Germany)

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## Invited Talks on International Conferences

31. M. Hentschel, *Von Flüstergalerieresonatoren zu neuartigen optischen Bauelementen*, Plenary talk, DGAO Annual Meeting, Bremen, Germany (June 2020 – Conference cancelled due to Corona pandemic).

30. M. Hentschel, *A phase-space view on mesoscopic optics*, International Workshop QUATUR20 in memory of Bruno Eckhardt, MPIPKS Dresden, Germany (April 2020 – *Conference cancelled due to Corona pandemic*).
29. M. Hentschel, *Mesoscopic Optics in Microcavity Arrays*, 6th International Workshop on Microcavities and their Applications (WOMA2019), Hongkong (December 2019 – *Conference cancelled by organizers following riots*).
28. M. Hentschel, *From mesoscopic physics to the interplay of topology and geometry in mesoscopic optics*, Invited Plenary Talk, 22nd Deutsche Physikerinnentagung (Conference on Women in Physics) of the German Physical Society (DPG), Oldenburg, Germany (September 28, 2018).
27. M. Hentschel, *Interplay of topology and geometry in mesoscopic optics*, International Workshop on Synthetic non-Hermitian photonic structures, MPIPKS Dresden, Germany (August 15, 2018).
26. M. Hentschel, *Mesoscopic optics - from billiards for light towards future photonic devices*, International Workshop marking the 60th Anniversary of Prof. Harold Baranger, Duke University, USA (May 25, 2018).
25. M. Hentschel, *Whispering-gallery-like modes in two and three dimensional microcavities*, Invited Talk (Hauptvortrag), 82nd Spring Meeting of the German Physical Society (DPG), Berlin, Germany (March 12, 2018).
24. M. Hentschel, *Three dimensional asymmetric optical microcavities*, Workshop on Asymmetric Microcavities and Wave Chaos 2017, Beijing, China (March 24, 2017).
23. M. Hentschel, *Frustrated light: Working around Berry phases*, International Workshop “Topology Matters!” ,SPICE, Mainz (July 25, 2017).
22. M. Hentschel, *Honey, we shrunk the laser! Quantum chaos meets application challenges*, 8th Conference ”From the witches cauldrons in materials science 2016”, Goslar, Germany (April 30, 2016).
21. M. Hentschel, *Ray-wave correspondence in optical microcavities: Semiclassical corrections at curved interfaces and triangular microlasers*, 4th International Workshop on Microcavities and their Applications (WOMA2015), Sapporo, Japan (December 3, 2015).
20. M. Hentschel, *A boundary-effect perspective on mesoscopic physics*, Session Workshop I “Quantum chaos: fundamentals and applications”, School for Advanced Sciences of Luchon, France (March 19, 2015).
19. M. Hentschel, *The lost echo: Reflection at (curved) dielectric interfaces*, International Workshop “Echos in Complex Systems”, MPIPKS Dresden, Germany (September 22, 2014).
18. M. Hentschel, *Active vs. passive optical microcavities*, International Conference “Advances in Quantum Chaotic Scattering: From (Non-)Linear Waves to Few-Body Systems”, MPIPKS Dresden, Germany (September 9, 2013).
17. International Workshop on Microcavities and their Applications (WOMA2013), Beijing, China, May 27-31, 2013 (*not accepted*).
16. M. Hentschel, *Zwischen Quantenmechanik und Klassik: Das mesoskopische Regime*, Invited Plenary Talk, 15th Deutsche Physikerinnentagung (Conference on Women in Physics) of the German Physical Society (DPG), Saarbrücken, Germany (November 4, 2011).
15. M. Hentschel, *From stable islands to attractors: Non-Hamiltonian features in microcavity ray dynamics* International Workshop on Microcavities and their Applications (WOMA2011), Busan, Korea (May 25, 2011).

14. M. Hentschel, Optical Microcavities, International Lorentz Workshop “Beam shifts: Analogies between light and matter waves”, Leiden, The Netherlands (March 28, 2011).
13. M. Hentschel, *Honey, I shrunk the laser!*, Invited Plenary Talk (Hertha Sponer Prize Talk), 75th Spring Meeting of the German Physical Society (DPG), Dresden, Germany (March 15, 2011).
12. International Summer School “Mesoscopic Physics in Complex Media”, Institute of Scientific Studies in Cargèse (IESC), Corsica, France, July 12-16, 2010 (*not accepted*).
11. International Conference “Nonlinear Dynamics in Quantum Systems”, Siberian Federal University, Krasnoyarsk, Russia, July 6-10, 2009 (*not accepted*).
10. 7th International Christmas Symposium, CAMTP Maribor, Slovenia, December 11-13, 2008 (*not accepted*).
9. M. Hentschel, *Fermi-edge singularities in the photoabsorption spectra of mesoscopic systems*, International Workshop “Nonequilibrium Nanostructures”, MPIPKS Dresden, Germany (December 5, 2008).
8. M. Hentschel, *Localization of modes and directional emission from optical microcavities*, International Conference “Nice Days of Waves in Complex Media”, Université Sophia Antipolis de Nice, France (November 27, 2008).
7. M. Hentschel, *Quantum chaos and non-Hamiltonian dynamics in optical microcavities*, NATO Advanced Workshop “Recent Advances in Nonlinear Dynamics and Complex System Physics: From Natural to Social Sciences and Security”, Tashkent, Uzbekistan (October 9, 2008).
6. International Conference “From Nanodevices to Biomolecules: 50 years after Anderson and Landauer”, Córdoba, Argentina, September 8-12, 2008 (*not accepted*).
5. M. Hentschel, *Incorporating wave effects in ray billiards: Challenging ray-wave correspondence in open systems*, International Workshop “Chaos and Collectivity in Many-Body Systems”, MPIPKS Dresden, Germany (March 8, 2008).
4. M. Hentschel, *From the phase-space representation of optical microcavities to an improved ray dynamics*, Invited Talk (Hauptvortrag), 72nd Spring Meeting of the German Physical Society (DPG), Berlin, Germany (February 28, 2008).
3. M. Hentschel, *Lessons from the phase-space representation of optical microresonators*, International Conference “Chaos and Complex Systems 2006”, Monastery of Novacella/Kloster Neustift, Brixen, Italy (October 9, 2006).
2. M. Hentschel, *Many-body effects in mesoscopic systems – The x-ray edge problem from metals to quantum dots*, International Conference “Quantum Mechanics and Chaos” (QMC 2006), Osaka City University, Osaka, Japan (September 19, 2006).
1. M. Hentschel, *Optical Microresonators: News from the Theoretician for the Experimentalist*, International Workshop “Microlasers”, Advanced Telecommunication Research Institute (ATR), Kyoto, Japan (September 15, 2006).

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#### Invited Colloquium, Seminar, and other Conference Talks

55. M. Hentschel, *From billiards for light to mesoscopic optics*, Seminar (Zoom), Imperial College London, UK (March 10, 2021).



54. M. Hentschel, *From 2D and 3D billiards for light to mesoscopic optics*, Seminar (Zoom), Okinawa Institute for Science and Technology (OIST), Japan (January 20, 2021).
53. M. Hentschel, *Strahl oder Welle oder beides? Licht in mesoskopischen Systemen*, Seminar (BBB), virtual TUC Open House Week, Chemnitz, Germany (June 17, 2020).
52. M. Hentschel, *Mesoscopic optics in complex systems: light out of equilibrium*, Colloquium, TU Berlin, Germany (October 29, 2019).
51. M. Hentschel, *Lichtausbreitung in Ensembles von Mikroresonatoren*, Vortrag, 120. Jahrestagung der Deutschen Gesellschaft für angewandte Optik (DGaO), Darmstadt, Germany (June 13, 2019).
50. M. Hentschel, *From billiards for light to mesoscopic optics*, Seminar, LPMMC CNRS Grenoble, France (May 28, 2019).
49. M. Hentschel, *Quantum physics in mesoscopic systems*, Seminar, Technische Universität Chemnitz, Germany (April 9, 2019).
48. M. Hentschel, *Complex dynamics in mesoscopic systems*, Seminar, Technische Universität Chemnitz, Germany (December 11, 2018).
47. M. Hentschel, *Mesoscopic Optics*, Talk, Biannual Meeting of the European Optical Society (EOS), Delft, The Netherlands (October 12, 2018).
46. M. Hentschel, *From billiards for light to light in mesoscopic systems*, Seminar, École Normale Supérieure de Lyon, France (May 22, 2018).
45. M. Hentschel, *Light in mesoscopic systems*, Physikalisches Kolloquium, Otto von Guericke Universität Magdeburg, Germany (April 10, 2018).
44. M. Hentschel, *Bridging scales, dimensions, and topology: the realm of mesoscopic physics*, Seminar, Universität Greifswald, Germany (December 19, 2017).
43. M. Hentschel, *Bridging scales, dimensions and topology: the realm of mesoscopic physics*, Seminar, Universität Erlangen-Nürnberg, Erlangen, Germany (September 05, 2017).
42. M. Hentschel, *Billiards for light: from nonlinear dynamics to microlasers*, Talk, 20th Deutsche Physikerinnentagung (Conference on women in physics) of the German Physical Society (DPG), Hamburg, Germany (November 04, 2016).
41. M. Hentschel, *Non-equilibrium in mesoscopic systems*, HZDR Kolloquium Theorie von Nichtgleichgewichtsphänomenen in Festkörpern oder Plasmen, HZDR Dresden-Rossendorf, Germany (October 15, 2016).
40. M. Hentschel, *Playing billiards with light*, Physikalisches Kolloquium der Technischen Universität Chemnitz, Germany (June 8, 2016).
39. M. Hentschel, *Billards für Licht*, Vortrag zum Lehrertag an der TU Ilmenau, Germany (September 26, 2013).
38. M. Hentschel, *Optik in mesoskopischen Systemen*, Seminar, Institut für Physik, Friedrich-Schiller-Universität Jena, Germany (February 14, 2013).
37. M. Hentschel, *Computergestützte Mesoskopie*, Seminar, Institut für Physik, Technische Universität Ilmenau, Germany (May 20, 2011).
36. M. Hentschel, *Quantum chaos in optical microcavities: From the Goos-Hänchen shift to non-Hamiltonian dynamics and directional light emission*, Seminar, Institut für Festkörper- und Werkstoffforschung (IFW), Dresden, Germany (April 30, 2010).

35. M. Hentschel, *Mesoscopic systems between quantum chaos and many-body effects*, Invited talk, Fachbereich Physik, Freie Universität Berlin, Germany (October 12, 2009).
34. M. Hentschel, *Statt MeV mal meV: Ein Exkurs ins Mesoskopische*, Invited talk (Honorary colloquium for B. Kämpfer), Forschungszentrum Dresden, Germany (June 3, 2009).
33. M. Hentschel, *Mesoskopische Systeme: Zwischen Quantenchaos und Vielteilchenphänomenen*, Invited talk, Department Physik, Universität Hamburg, Germany (February 11, 2009).
32. M. Hentschel, *Mesoskopische Effekte in Quantenpunkten und optischen Kavitäten*, Invited talk, Fakultät für Physik, Universität Erlangen-Nürnberg, Germany (February 3, 2009).
31. M. Hentschel, *Mesoskopische Systeme: Zwischen Quantenchaos und Vielteilchenphänomenen*, Invited talk, Fakultät für Physik und Astronomie, Ruhr-Universität Bochum, Germany (January 14, 2009).
30. M. Hentschel, *Optical microcavities: From quantum chaos with non-Hamiltonian dynamics to directional emission*, Seminar, Institut für Optik, Information und Photonik (Max-Planck-Forschergruppe), Universität Erlangen, Germany (December 9, 2008).
29. M. Hentschel, *The mesoscopic x-ray edge problem: From chaotic to integrable quantum dots and to graphene*, Seminar, Centro Atómico Bariloche, Argentina (November 12, 2008).
28. M. Hentschel, *Quantum chaos in optical microcavities: From the Goos-Haenchen shift to non-Hamiltonian dynamics and directional light emission*, Seminar, Laboratorio Tandara (Quantum Chaos Group), CNEA, Buenos Aires, Argentina (November 10, 2008).
27. M. Hentschel, *Incorporating wave effects in ray billiards: Non-Hamiltonian dynamics in optical microcavities*, Colloquium Quantum Dynamics, Universität Heidelberg, Germany (June 4, 2008).
26. M. Hentschel, *Fermi-edge singularities in mesoscopic systems: From quantum dots to graphene*, Seminar, Imperial College London, London, Great Britain (April 29, 2008).
25. M. Hentschel, *When small is different: An excursion into the mesoscopic world*, Colloquium of the Physics Department, University of St. Andrews, St. Andrews, Great Britain (April 25, 2008).
24. M. Hentschel, *Optische Mikroresonatoren: Erkenntnisse aus der Phasenraumdarstellung*, Talk, Freie Universität Berlin, Germany (December 7, 2007).
23. M. Hentschel, *Fermi-edge singularities in mesoscopic systems: From quantum dots to graphene*, Seminar, Instituto de Ciencia de Materiales, Madrid, Spain (November 13, 2007).
22. M. Hentschel, *Many-body effects in mesoscopic systems: From quantum dots to graphene*, Colloquium, Martin-Luther-Universität Halle-Wittenberg, Germany (October 24, 2007).
21. M. Hentschel, *Optical interfaces: When, and why, curvature matters*, Asian-German Miniworkshop on Optical Microcavities, MPIPKS Dresden, Germany (July 12, 2007).
20. M. Hentschel, *Many-body effects in mesoscopic systems*, Theoriekolloquium des Fachbereichs Physik, Technische Universität Darmstadt, Germany (February 5, 2007).
19. M. Hentschel, *Fermi-edge singularities in the mesoscopic regime*, Seminar, Fachbereich Physik, Universität Frankfurt am Main, Germany (June 22, 2006).
18. M. Hentschel, *The x-ray edge problem: From metals to nanosystems - from rounded to peaked edge*, Seminar, Physics Department, Chiba University, Chiba, Japan (December 14, 2005).

17. M. Hentschel, *Asymmetric optical microcavities: Ray-wave correspondence put to test*, Seminar, Physics Department, Pai Chai University, Daejeon, Korea (November 25, 2005).
16. M. Hentschel, *Many-body effects in mesoscopic systems: Fermi-edge singularities in photoabsorption spectra of chaotic nanosystems*, Quantum Transport Seminar, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea (November 24, 2005).
15. M. Hentschel, *Optical microresonators: Ray-wave correspondence put to test*, Seminar, Physics Department, Busan National University, Busan, Korea (November 23, 2005).
14. M. Hentschel, *Goos-Hänchen effect at curved dielectric interfaces: Effects in the far field radiation characteristics of microlasers*, V. Workshop on Classical and Quantum Billiards, Göttingen, Germany (September 29, 2005).
13. M. Hentschel, *The mesoscopic x-ray edge problem: From rounded to peaked edge*, Seminar, Institut für Theoretische Festkörperphysik, Freie Universität Berlin, Germany (June 2, 2005).
12. M. Hentschel, *Fermi-edge singularities in the mesoscopic regime: From rounded to peaked edge*, Seminar, Instituto de Física, Universidade de Estado do Rio de Janeiro, Rio de Janeiro, Brazil (May 20, 2005).
11. M. Hentschel, *Many-body effects in the mesoscopic regime*, Lecture, Material Science Center, Rijksuniversiteit Groningen, The Netherlands (March 2, 2005).
10. M. Hentschel, *Charge qubits for quantum computation: Chances and limitations*, Seminar, Department of Physics, Duke University, Durham, USA (October 20, 2004).
9. M. Hentschel, *Anderson orthogonality catastrophe and Fermi-edge singularities in mesoscopic photoabsorption spectra*, Workshop and Seminar on Cooperative Phenomena in Optics and Transport in Nanostructures, Max-Planck-Institut für Physik komplexer Systeme, Dresden, Germany (June 18, 2004).
8. M. Hentschel, *Optical microresonators: Rays, waves, and semiclassics*, Colloquium of the Physics Department, University of Missouri at Rolla, USA (October 9, 2003).
7. M. Hentschel, *Quantum chaos and semiclassics in optical microresonators*, Seminar, Institut für Theoretische Physik, Universität Regensburg, Germany (September 26, 2003).
6. M. Hentschel, *The mesoscopic x-ray edge problem*, Seminar, Max-Planck-Institut für Physik komplexer Systeme, Dresden, Germany (September 23, 2003).
5. M. Hentschel, *Anderson orthogonality catastrophe and the x-ray edge problem in mesoscopic systems*, Seminar, Institut für Theoretische Festkörperphysik, Universität Karlsruhe, Germany (September 12, 2003).
4. M. Hentschel, *Optical Microcavities: Rays, Waves, and Semiclassics*, Kolloquium des SFB 513, Fachbereich Physik, Universität Konstanz, Germany (December 19, 2002).
3. M. Hentschel, *Spin-dependent transport in ballistic rings*, Seminar, Institut für Experimentelle und Angewandte Physik, Universität Regensburg, Germany (June 6, 2002).
2. M. Hentschel, *Mesoscopic wave phenomena in electronic and optical ring structures*, Seminar, Institut für Technische Physik, Theoretische Quantenelektronik, DLR Stuttgart, Germany (December 10, 2001).
1. M. Hentschel, *Chaos and regularity in optical systems: Annular billiard as example*, Seminar, Laboratoire de Physique Théorique et Modèles Statistiques (LPTMS), Orsay, France (September 25, 2001).