Carlo Beenakker

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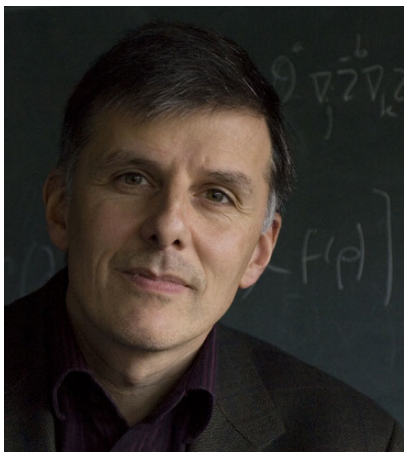

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1978 Eindexamen Gymnasium, Stedelijk Gymnasium te Leiden.
1982 Doctoraalexamen Natuurkunde (cum laude), Rijksuniversiteit te Leiden.
1984 Promotie (cum laude) aan de Rijksuniversiteit te Leiden; Promotor: Peter Mazur.
1985 Stipendiaat Niels Stensen Stichting; Post-Doc in Stanford en in Santa Barbara (USA).
1986 (–1991) Wetenschappelijk medewerker van Philips' Natuurkundig Laboratorium te Eindhoven.
1991 (–heden) Hoogleraar in de theoretische natuurkunde aan de Universiteit Leiden.

Zie de publicatielijst op Google Scholar of op Web of Science of op arXiv.
Hirsch index = 88 [WoS] of 107 [GS].

Onderscheidingen —

1985 C.J. Kok prijs voor het proefschrift *On transport properties of concentrated suspensions.*
1993 PIONIER subsidie.
1993 Koninklijke/Shell prijs (met Henk van Houten & Bart van Wees).
1997 Winnaar van de Nationale Wetenschapsquiz.
1999 NWO/Spinoza prijs.
2001 Verkiezing tot lid van de Koninklijke Hollandsche Maatschappij der Wetenschappen.
2002 Verkiezing tot lid van de Koninklijke Nederlandse Akademie van Wetenschappen.
2003 Physica prijs.
2005 NWO/Huygens lezing.
2006 AKZO Nobel Science Award.
2008 Haarlemse voordracht.
2009 Leigh Page prijs.
2009 ERC Advanced Investigator Grant.
2012 ERC Synergy Grant (met Leo Kouwenhoven & Lieven Vandersypen).
2015 W.J. Carr lezing.
2015 Ridder in de Orde van de Nederlandse Leeuw.
2018 Eredoctoraat (Bogolyubov Institute of the National Academy of Sciences of Ukraine).
2019 ERC Advanced Investigator Grant.
2020 Verkiezing tot Fellow van de American Physical Society.
2024 Verkiezing tot Fellow van de American Association for the Advancement of Science.

Beroepswerkzaamheden —

- Wetenschappelijk adviseur op het Philips' Natuurkundig Laboratorium te Eindhoven (1992–1996).
- Lid van de Raad voor Natuur- en Sterrenkunde van de Koninklijke Nederlandse Akademie van Wetenschappen (2000–2006). Secretaris van de sectie Natuur- en Sterrenkunde (2006–2016).
- Lid van de Wetenschappelijke Raad van het Nederlands Forensisch Instituut (2001–2003).
- Lid van de Natuurkunde Adviesraad van het Lorentz Center (2001–2005).
- Voorzitter van het Lorentzfonds (2002–2022).
- Lid (vice-voorzitter sinds 2007) van het Uitvoerend Bestuur van de Stichting voor Fundamenteel Onderzoek der Materie en van het Gebiedsbestuur Natuurkunde van de Nederlandse Organisatie voor Wetenschappelijk Onderzoek (2004–2011).

- Bestuurslid van de Niels Stensen Stichting (2005–2019).
- Lid/voorzitter van Investigator Grant Panels van de European Research Council (sinds 2010).
- Congresambassadeur voor Leiden (sinds 2014).
- Lid van de Internationale Adviescommissie van het National Center for Theoretical Sciences, Taiwan (2016–2020).
- Lid van de Internationale Adviescommissie van het Institute for Molecules and Materials, Nijmegen (sinds 2016).
- Lid van de Oostenrijkse Wittgensteinprijs jury (2016–2024).
- Lid van de toewijzingscommissie van het Minerva Scholarship Fonds (sinds 2016).
- Lid van de Internationale Adviescommissie van het Oekraïnse Ministerie van Wetenschappen (sinds 2016).
- Trekker van de Quantum/Nano route van de Nationale Wetenschaps Agenda (2017-2026).
- Lid van de Internationale Adviescommissie van het European Microkelvin Platform (sinds 2019).
- Lid van het uitvoerend bestuur van de Nederlandse Raad voor de Natuurkunde (2020–2025).
- Voorzitter van de raad van toezicht van de Stichting Quantum Delta Nederland (sinds 2020).
- Lid van de adviesraad van het Centre for Dynamics and Topology (TopDyn) (sinds 2020).
- Lid van de evaluatiecommissie van de European Innovation Council (sinds 2021).
- Lid van de strategische adviescommissie van QuantAlps (sinds 2022).
- Lid van het curatorium van het Legatum Stolpianum (sinds 2023).
- Lid van Internationale Adviescommissie, Institute for Theoretical Studies, ETH Zürich (sinds 2025).

Redactiewerkzaamheden —

- Advisory Editor, Physica A (1995–1999).
- Editorial Board Member, Physical Review B (1996–2002).
- Editor, Physics Reports (1998–2004).
- Divisional Associate Editor, Physical Review Letters (2003–2009).
- EPL Distinguished Referee (2009).
- APS Outstanding Referee (2011).
- Editorial Board Member, Annalen der Physik (sinds 2012).
- Editor, New Journal of Physics (2012–2018).
- Member of the Board of Reviewing Editors, Science (sinds 2014).
- Founding Editor, Quantum (sinds 2016).
- Senior Editor, SciPost (2017–2026).
- IOP Outstanding Reviewer (2017).
- Editorial Board Member, Advanced Quantum Technologies (sinds 2018).
- Editorial Board Member, PRX Quantum (2020–2024).
- Redactieraad, Radix (2022–2026).
- Editorial Board Member, Advances in Theoretical and Mathematical Physics (sinds 2022).
- Editorial Board Member, APL Quantum (2024–2026).
- Advisory Editor, Physica E (sinds 2025).

Promovendi —

- A.A.M. Staring, *Coulomb-blockade oscillations in quantum dots and wires* (1992).
- B. Rejaei-Salmassi, *On the conductivity of strongly correlated low-dimensional systems* (1994).
- M.J.M. de Jong, *Shot noise and electrical conduction in mesoscopic systems* (1995).
- P.W. Brouwer, *On the random-matrix theory of quantum transport* (1997).
- J.A. Melsen, *Induced superconductivity in microstructures* (1997).
- J.C.J. Paasschens, *On the transmission of light through random media* (1997).
- S.A. van Langen, *Thermal and electrical phenomena in chaotic conductors* (1998).
- M.C.J.M. Vissenberg, *Opto-electronic properties of disordered organic semiconductors* (1999).
- M. Patra, *On quantum optics of random media* (2000).
- K.J.H. van Bemmel, *On chaotic wave dynamics* (2001).
- M. Kindermann, *Electron counting statistics in nanostructures* (2003).
- A. Tajic, *Study of a stroboscopic model of a quantum dot* (2005).
- A. F. Andreev, *honorary doctorate* (2005).
- M.C. Goorden, *Superconductivity in nanostructures: Andreev billiards and Josephson junction qubits* (2005).

- J.L. van Velsen, *On the production and transfer of entangled electrons and photons* (2005).
- B.D. Michaelis, *On dephasing and spin decay in open quantum dots* (2006).
- J.H. Bardarson, *Effects of spin-orbit coupling on quantum transport* (2008).
- I. Snyman, *Scattering problems involving electrons, photons, and Dirac fermions* (2008).
- R.A. Sepkhanov, *Light scattering by photonic crystals with a Dirac spectrum* (2009).
- C.W. Groth, *Anomalous diffusion of Dirac fermions* (2010).
- M.V. Medvedyeva, *On localization of Dirac fermions by disorder* (2011).
- A.R. Akhmerov, *Dirac and Majorana edge states in graphene and topological superconductors* (2011).
- J.P. Dahlhaus, *Random-matrix theory and stroboscopic models of topological insulators and superconductors* (2012).
- I.C. Fulga, *Scattering theory of topological phase transitions* (2013).
- D.I. Pikulin, *On topological properties of superconducting nanowires* (2013).
- S. Mi, *Signatures of Majorana zero-modes in nanowires, quantum spin Hall edges, and quantum dots* (2015).
- B. van Heck, *Quantum computation with Majorana modes in superconducting circuits* (2015).
- M. Diez, *On electronic signatures of topological superconductivity* (2015).
- B.M. Tarasinski, *On periodically driven quantum systems* (2016).
- P.S. Baireuther, *On transport properties of Weyl semimetals* (2017).
- M. Marciani, *On the random-matrix theory of Majorana fermions in topological superconductors* (2017).
- V.P. Ostroukh, *Lattice models for Josephson junctions and graphene superlattices* (2018).
- N. Bovenzi, *Spin-momentum locking in oxide interfaces and in Weyl semimetals* (2018).
- N.V. Gnezdilov, *On transport properties of Majorana fermions in superconductors: free & interacting* (2019).
- T.E. O'Brien, *Applications of topology to Weyl semimetals and quantum computing* (2019).
- M. Steudtner, *Methods to simulate fermions on quantum computers with hardware limitations* (2019).
- M.J. Pacholski, *On the coexistence of Landau levels and superconductivity* (2021).
- Y. Herasymenko, *Strategies for braiding and ground state preparation in digital quantum hardware* (2022).
- M. Semenyakin, *On cluster algebras and topological string theory* (2022).
- X. Bonet-Monroig, *Optimization of quantum algorithms for near-term quantum computers* (2022).
- Y.I. Cheipesh, *Anyonic, cosmic, and chaotic: three faces of Majorana fermions* (2022).
- G. Lemut, *On topological properties of massless fermions in a magnetic field* (2023).
- D.O. Oriekhov, *On quantum transport in flat-band materials* (2023).
- S. Polla, *The power of one qubit in quantum simulation algorithms* (2024).
- A. Donís Vela, *Tangent fermions: massless fermions on a lattice* (2024).
- T. Vakhtel, *Hybrid Josephson junctions and their qubit applications* (2024).
- V.A. Zakharov, *Luttinger liquid on a lattice* (2025).
- A. Dutkiewicz, *Quantum parametric estimation for early fault-tolerant quantum simulation* (2026).

Lijst van publicaties —

1. *Diffusion of spheres in suspension: three-body hydrodynamic interaction effects,* C.W.J. Beenakker and P. Mazur, Physics Letters A **91**, 290–291 (1982).
2. *Self-diffusion of spheres in a concentrated suspension,* C.W.J. Beenakker and P. Mazur, Physica A **120**, 388–410 (1983).
3. *Diffusion of spheres in a concentrated suspension: resummation of many-body hydrodynamic interactions,* C.W.J. Beenakker and P. Mazur, Physics Letters A **98**, 22–24 (1983).
4. *General discussion on hydrodynamic interactions,* C.W.J. Beenakker, Faraday Discussions of the Chemical Society **76**, 229–260 (1983).
5. *Diffusion of spheres in a concentrated suspension II,* C.W.J. Beenakker and P. Mazur, Physica A **126**, 349–370 (1984).
6. *Many-sphere hydrodynamic interactions III. The influence of a plane wall,* C.W.J. Beenakker, W. van Saarloos, and P. Mazur, Physica A **127**, 451–472 (1984).
7. *The effective viscosity of a concentrated suspension of spheres (and its relation to diffusion),* C.W.J. Beenakker, Physica A **128**, 48–81 (1984).
8. *On transport properties of concentrated suspensions,* C.W.J. Beenakker, Ph.D. Thesis, Universiteit Leiden (1984).
9. *On the Smoluchowski paradox in a sedimenting suspension,* C.W.J. Beenakker and P. Mazur, Physics of Fluids **28**, 767–769 (1985).
10. *Phase separation and pattern formation,* J.S. Langer and C.W.J. Beenakker, in: Fundamental Problems in Statistical Mechanics VI, edited by E.G.D. Cohen (North-Holland, Amsterdam, 1985): pp. 313–328.
11. *Many-sphere hydrodynamic interactions IV. Wall-effects inside a spherical container,* C.W.J. Beenakker and P. Mazur, Physica A **131**, 311–328 (1985).
12. *Is sedimentation container-shape dependent?,* C.W.J. Beenakker and P. Mazur, Physics of Fluids **28**, 3203–3206 (1985).

13. *Theory of Ostwald ripening for open systems,* C.W.J. Beenakker and J. Ross, Journal of Chemical Physics **83**, 4710–4714 (1985).
14. *Monte Carlo study of a model of diffusion-controlled reactions,* C.W.J. Beenakker and J. Ross, Journal of Chemical Physics **84**, 3857–3864 (1986).
15. *Numerical simulation of diffusion-controlled droplet growth: Dynamical correlation effects,* C.W.J. Beenakker, Physical Review A **33**, 4482(R) (1986).
16. *Ewald sum of the Rotne-Prager tensor,* C.W.J. Beenakker, Journal of Chemical Physics **85**, 1581–1582 (1986).
17. *Evolution of two-dimensional soap-film networks,* C.W.J. Beenakker, Physical Review Letters **57**, 2454–2457 (1986).
18. *Two-dimensional soap froths and polycrystalline networks: why are large cells many-sided?,* C.W.J. Beenakker, Physica A **147**, 256–267 (1987).
19. *Numerical simulation of a coarsening two-dimensional network,* C.W.J. Beenakker, Physical Review A **37**, 1697–1702 (1988).
20. *Boundary scattering modified one-dimensional weak localization in submicron GaAs/AlGaAs heterostructures,* H. van Houten, C.W.J. Beenakker, B.J. van Wees, and J.E. Mooij, Surface Science **196**, 144–149 (1988).
21. *Quantized conductance of point contacts in a two–dimensional electron gas,* B.J. van Wees, H. van Houten, C.W.J. Beenakker, J.G. Williamson, L.P. Kouwenhoven, D. van der Marel, and C.T. Foxon, Physical Review Letters **60**, 848–850 (1988).
22. *Coherent electron focussing in a two–dimensional electron gas,* H. van Houten, B.J. van Wees, J.E. Mooij, C.W.J. Beenakker, J.G. Williamson, and C.T. Foxon, Europhysics Letters **5**, 721–725 (1988).
23. *Quantum and classical ballistic transport in constricted two-dimensional electron gases,* H. van Houten, B.J. van Wees, and C.W.J. Beenakker, in: Springer Series in Solid-State Sciences Vol. 83: Physics and Technology of Submicron Structures, edited by H. Heinrich, G. Bauer, and F. Kuchar (Springer, Berlin, 1988): pp. 198–207.
24. *Flux-cancellation effect on narrow-channel magnetoresistance fluctuations,* C.W.J. Beenakker and H. van Houten, Physical Review B **37**, 6544(R) (1988).
25. *Four-terminal magnetoresistance of a two-dimensional electron-gas constriction in the ballistic regime,* H. van Houten, C.W.J. Beenakker, P.H.M. van Loosdrecht, T.J. Thornton, H. Ahmed, M. Pepper, C.T. Foxon, and J.J. Harris, Physical Review B **37**, 8534(R) (1988).
26. *Quenching of the Hall effect,* C.W.J. Beenakker and H. van Houten, Physical Review Letters **60**, 2406–2409 (1988).
27. *Quantized conductance of magnetoelectric subbands in ballistic point contacts,* B.J. van Wees, L.P. Kouwenhoven, H. van Houten, C.W.J. Beenakker, J.E. Mooij, C.T. Foxon, and J.J. Harris, Physical Review B **38**, 3625(R) (1988).
28. *Boundary scattering and weak localization of electrons in a magnetic field,* C.W.J. Beenakker and H. van Houten, Physical Review B **38**, 3232–3240 (1988).
29. *Quantum ballistic electron transport in a constricted two-dimensional electron gas,* B.J. van Wees, H. van Houten, C.W.J. Beenakker, L.P. Kouwenhoven, J.G. Williamson, J.E. Mooij, C.T. Foxon, and J.J. Harris, in: Proceedings 19th International Conference on the Physics of Semiconductors, Vol. 1, edited by W. Zawadzki (Warsaw, 1988): pp. 39–46.
30. *Mode interference effect in coherent electron focusing,* C.W.J. Beenakker, H. van Houten, and B.J. van Wees, Europhysics Letters **7**, 359–364 (1988).
31. *Van kogelbaan tot hinkelbaan: elektronen als interfererende kaatsballen,* H. van Houten, B.J. van Wees, and C.W.J. Beenakker, Nederlands Tijdschrift voor Natuurkunde A **54** (3/4), 121–125 (1988).
32. *Aharonov-Bohm effect in a singly connected point contact,* P.H.M. van Loosdrecht, C.W.J. Beenakker, H. van Houten, J.G. Williamson, B.J. van Wees, J.E. Mooij, C.T. Foxon, and J.J. Harris, Physical Review B **38**, 10162(R) (1988).
33. *Magnetoresistance of narrow GaAs-(Al,Ga)As heterostructures in the quasi-ballistic regime,* H. van Houten, C.W.J. Beenakker, M.E.I. Broekaart, M.G.H.J. Heijman, B.J. van Wees, J.E. Mooij, and J.-P. André, Acta Electronica **28**, 27–38 (1988).
34. *Skipping orbits, traversing trajectories, and quantum ballistic transport in microstructures,* C.W.J. Beenakker, H. van Houten, and B.J. van Wees, Superlattices and Microstructures **5**, 127–132 (1989).
35. *Anomalous integer quantum Hall effect in the ballistic regime with quantum point contacts,* B.J. van Wees, E.M.M. Willems, C.J.P.M. Harmans, C.W.J. Beenakker, H. van Houten, J.G. Williamson, C.T. Foxon, and J.J. Harris, Physical Review Letters **62**, 1181–1184 (1989).
36. *Nonlinear conductance of quantum point contacts,* L.P. Kouwenhoven, B.J. van Wees, C.J.P.M. Harmans, J.G. Williamson, H. van Houten, C.W.J. Beenakker, C.T. Foxon, and J.J. Harris, Physical Review B **39**, 8040(R) (1989).
37. *Coherent electron focusing with quantum point contacts in a two-dimensional electron gas,* H. van Houten, C.W.J. Beenakker, J.G. Williamson, M.E.I. Broekaart, P.H.M. van Loosdrecht, B.J. van Wees, J.E. Mooij, C.T. Foxon, and J.J. Harris, Physical Review B **39**, 8556–8575 (1989).
38. *Reply to Comment on "Quenching of the Hall effect",* C.W.J. Beenakker and H. van Houten, Physical Review Letters **62**, 1921 (1989).
39. *Guiding-center-drift resonance in a periodically modulated two-dimensional electron gas,* C.W.J. Beenakker, Physical Review Letters **62**, 2020–2023 (1989).
40. *Magnetotransport and nonadditivity of point-contact resistances in series,* C.W.J. Beenakker and H. van Houten, Physical Review B **39**, 10445(R) (1989).
41. *Coherent electron focusing,* C.W.J. Beenakker, H. van Houten, and B.J. van Wees, in: Festkörperprobleme/Advances in

Solid State Physics, Vol. 29, edited by U. Rößler (Vieweg, Braunschweig, 1989): pp. 299–316.

42. *Electron beams and waveguide modes: aspects of quantum ballistic transport,* H. van Houten and C.W.J. Beenakker, in: Nanostructure Physics and Fabrication, edited by M.A. Reed and W.P. Kirk (Academic Press, New York, 1989): pp. 347–359.
43. *Billiard model of a ballistic multiprobe conductor,* C.W.J. Beenakker and H. van Houten, Physical Review Letters **63**, 1857–1860 (1989).
44. *Comment on "Conductance oscillations periodic in the density of a one-dimensional electron gas",* H. van Houten and C.W.J. Beenakker, Physical Review Letters **63**, 1893 (1989).
45. *Edge channels for the fractional quantum Hall effect,* C.W.J. Beenakker, Physical Review Letters **64**, 216–219 (1990).
46. *Hot-electron spectrometry with quantum point contacts,* J.G. Williamson, H. van Houten, C.W.J. Beenakker, M.E.I. Broekaart, L.I.A. Spendeler, B.J. van Wees, and C.T. Foxon, Physical Review B **41**, 1207–1210 (1990).
47. *Electron-beam collimation with a quantum point contact,* L.W. Molenkamp, A.A.M. Staring, C.W.J. Beenakker, R. Eppenga, C.E. Timmering, J.G. Williamson, C.J.P.M. Harmans, and C.T. Foxon, Physical Review B **41**, 1274(R) (1990).
48. *Magnetoconductance of two point contacts in series,* A.A.M. Staring, L.W. Molenkamp, C.W.J. Beenakker, L.P. Kouwenhoven, and C.T. Foxon, Physical Review B **41**, 8461–8464 (1990).
49. *Quantum oscillations in the transverse voltage of a channel in the non-linear transport regime,* L.W. Molenkamp, H. van Houten, C.W.J. Beenakker, R. Eppenga, and C.T. Foxon, Physical Review Letters **65**, 1052–1055 (1990).
50. *Semi-classical theory of magnetoresistance anomalies in ballistic multi-probe conductors,* C.W.J. Beenakker and H. van Houten, in: Electronic Properties of Multilayers and Low-Dimensional Semiconductor Structures, edited by J.M. Chamberlain, L. Eaves, and J.C. Portal, NATO ASI Series B231 (Plenum, New York, 1990): pp. 75–94.
51. *Quantum point contacts and coherent electron focusing,* H. van Houten and C.W.J. Beenakker, in: Analogies in Optics and Micro Electronics, edited by W. van Haeringen and D. Lenstra (Kluwer, Dordrecht, 1990): pp. 203–225.
52. *Quantum ballistic and adiabatic electron transport studied with quantum point contacts,* B.J. van Wees, L.P. Kouwenhoven, E.M.M. Willems, C.J.P.M. Harmans, J.E. Mooij, H. van Houten, C.W.J. Beenakker, J.G. Williamson, and C.T. Foxon, Physical Review B **43**, 12431–12453 (1991).
53. *Injection of ballistic hot electrons and cool holes in a two-dimensional electron gas,* J.G. Williamson, H. van Houten, C.W.J. Beenakker, M.E.I. Broekaart, L.I.A. Spendeler, B.J. van Wees, and C.T. Foxon, Surface Science **229**, 303–306 (1990).
54. *Quantum point contacts,* H. van Houten, C.W.J. Beenakker, and B.J. van Wees, in: Semiconductors and Semimetals, Vol. 35, edited by M.A. Reed (Academic Press, New York, 1992): pp. 9–112.
55. *Quantum transport in semiconductor nanostructures,* C.W.J. Beenakker and H. van Houten, in: Solid State Physics, Vol. 44, edited by H. Ehrenreich and D. Turnbull (Academic Press, New York, 1991): pp. 1–228.
56. *Spatial potential distribution in $GaAs/Al_xGa_{1-x}As$ heterostructures under quantum Hall conditions studied with the linear electro-optic effect,* P.F. Fontein, J.A. Kleinen, P. Hendriks, F.A.P. Blom, J.H. Wolter, H.G.M. Lochs, F.A.J.M. Driessen, L.J. Giling, and C.W.J. Beenakker, Physical Review B **43**, 12090(R) (1991).
57. *Coulomb blockade of the Aharonov-Bohm effect,* C.W.J. Beenakker, H. van Houten, and A.A.M. Staring, in: Granular Nanoelectronics, edited by D.K. Ferry, J.R. Barker, and C. Jacoboni, NATO ASI Series B251 (Plenum, New York, 1991): pp. 359–370.
58. *Oscillating transverse voltage in a channel with quantum point contact voltage probes,* L.W. Molenkamp, H. van Houten, C.W.J. Beenakker, R. Eppenga, and C.T. Foxon, in: Condensed Systems of Low Dimensionality, edited by J.L. Beeby, P.K. Bhattacharya, P.Ch. Gravelle, F. Koch, and D.J. Lockwood, NATO ASI Series B253 (Plenum, New York, 1991): pp. 335–345.
59. *Adiabatic transport in the fractional quantum Hall effect regime,* C.W.J. Beenakker, in: Quantum Coherence in Mesoscopic Systems, edited by B. Kramer, NATO ASI Series B254 (Plenum, New York, 1991): pp. 177–193.
60. *Limits on deviations from Onsager-Casimir symmetry in the resistance of $YBa_2Cu_3O_{7-\delta}$,* M.A.M. Gijs, A.M. Gerrits, and C.W.J. Beenakker, Physical Review B **42**, 10789(R) (1990).
61. *Coulomb-regulated conductance oscillations in a disordered quantum wire,* A.A.M. Staring, H. van Houten, C.W.J. Beenakker, and C.T. Foxon, in: High Magnetic Fields in Semiconductor Physics III, edited by G. Landwehr (Springer, Berlin, 1992): pp. 301-312.
62. *Oscillatory thermopower of a quantum point contact,* L.W. Molenkamp, H. van Houten, C.W.J. Beenakker, R. Eppenga, M.F.H. Schuurmans, and C.T. Foxon, in: Proceedings 20th International Conference on the Physics of Semiconductors, Vol. 3, edited by E.M. Anastassakis and J.D. Joannopoulos (World Scientific, Singapore, 1991): pp. 2347–2350.
63. *Theory of Coulomb-blockade oscillations in the conductance of a quantum dot,* C.W.J. Beenakker, Physical Review B **44**, 1646–1656 (1991).
64. *Influence of Coulomb repulsion on the Aharonov-Bohm effect in a quantum dot,* C.W.J. Beenakker, H. van Houten, and A.A.M. Staring, Physical Review B **44**, 1657–1662 (1991).
65. *Observation of the optical analogue of quantized conductance of a point contact,* E.A. Montie, E.C. Cosman, G.W. 't Hooft, M.B. van der Mark, and C.W.J. Beenakker, Nature **350**, 594–595 (1991).
66. *Superconductivity in the mean-field anyon gas,* B. Rejaei and C.W.J. Beenakker, Physical Review B **43**, 11392–11395 (1991).
67. *Biljarten met elektronen,* C.W.J. Beenakker, Oratie, Universiteit Leiden (1991).
68. *Semiclassical theory of shot noise and its suppression in a conductor with deterministic scattering,* C.W.J. Beenakker and H. van Houten, Physical Review B **43**, 12066(R) (1991).

69. *Voltage-probe-controlled breakdown of the quantum Hall effect,* L.W. Molenkamp, M.J.P. Brugmans, H. van Houten, C.W.J. Beenakker, and C.T. Foxon, Physical Review B **43**, 12118(R) (1991).
70. *Schakelen met elektronen in nanostructuren,* C.W.J. Beenakker and H. van Houten, Polytechnisch Tijdschrift, **46**(4), 50–53 (1991).
71. *Josephson current through a superconducting quantum point contact shorter than the coherence length,* C.W.J. Beenakker and H. van Houten, Physical Review Letters **66**, 3056–3059 (1991).
72. *Coulomb-blockade oscillations in semiconductor nanostructures,* H. van Houten, C.W.J. Beenakker, and A.A.M. Staring, in: Single Charge Tunneling, edited by H. Grabert and M.H. Devoret, NATO ASI Series B294 (Plenum, New York, 1992): pp. 167–216.
73. *Observation of the optical analogue of the quantised conductance of a point contact,* E.A. Montie, E.C. Cosman, G.W. 't Hooft, M.B. van der Mark, and C.W.J. Beenakker, Physica B **175**, 149–152 (1991).
74. *Andreev reflection and the Josephson effect in a quantum point contact: An analogy with phase-conjugating resonators,* H. van Houten and C.W.J. Beenakker, Physica B **175**, 187–197 (1991).
75. *Coulomb-blockade oscillations in a quantum dot,* A.A.M. Staring, J.G. Williamson, H. van Houten, C.W.J. Beenakker, L.P. Kouwenhoven, and C.T. Foxon, Physica B **175**, 226–230 (1991).
76. *Lateral electron transport through a quantum dot: Coulomb blockade and quantum transport,* J.G. Williamson, A.A.M. Staring, L.P. Kouwenhoven, H. van Houten, C.W.J. Beenakker, C.E. Timmering, M. Mabesoone, and C.T. Foxon, in: Nanostructures and Mesoscopic Systems, edited by W.P. Kirk and M.A. Reed (Academic, New York, 1992): pp. 255–266.
77. *The superconducting quantum point contact,* C.W.J. Beenakker and H. van Houten, in: Nanostructures and Mesoscopic Systems, edited by W.P. Kirk and M.A. Reed (Academic, New York, 1992): pp. 481–497.
78. *Coulomb-blockade oscillations in disordered quantum wires,* A.A.M. Staring, H. van Houten, C.W.J. Beenakker, and C.T. Foxon, Physical Review B **45**, 9222–9236 (1992).
79. *Thermo-electric properties of quantum point contacts,* H. van Houten, L.W. Molenkamp, C.W.J. Beenakker, and C.T. Foxon, Semiconductor Science and Technology **7**, B215–B221 (1992).
80. *Resonant Josephson current through a quantum dot,* C.W.J. Beenakker and H. van Houten, in: Single-Electron Tunneling and Mesoscopic Devices, edited by H. Koch and H. Lübbig (Springer, Berlin, 1992): pp. 175–179.
81. *Coulomb-blockade oscillations in quantum wires and dots,* H. van Houten, C.W.J. Beenakker, and A.A.M. Staring, in: Single-Electron Tunneling and Mesoscopic Devices, edited by H. Koch and H. Lübbig (Springer, Berlin, 1992): pp. 159–169.
82. *Selective backscattering and the breakdown of the quantum Hall effect,* L.W. Molenkamp, M.J.P. Brugmans, H. van Houten, C.W.J. Beenakker, and C.T. Foxon, Surface Science **263**, 288–292 (1992).
83. *Spatial potential distribution in $\mathrm{GaAs/Al_xGa_{1-x}As}$ heterostructures under quantum Hall conditions studied with the linear electro-optic effect,* P.F. Fontein, P. Hendriks, F.A.P. Blom, J.H. Wolter, L.J. Giling, and C.W.J. Beenakker, Surface Science **263**, 91–96 (1992).
84. *Observation of excess conductance of a constricted electron gas in the fractional quantum Hall regime,* B.W. Alphenaar, J.G. Williamson, H. van Houten, C.W.J. Beenakker, and C.T. Foxon, Physical Review B **45**, 3890(R) (1992).
85. *Thermal and thermo-electric transport properties of quantum point contacts,* L.W. Molenkamp, H. van Houten, C.W.J. Beenakker, and C.T. Foxon, in: International School of Physics Enrico Fermi, Vol. 117, *Semiconductor Superlattices and Interfaces*, edited by A. Stella and L. Miglio (North-Holland, Amsterdam, 1993): pp. 365–378.
86. *Universal limit of critical-current fluctuations in mesoscopic Josephson junctions,* C.W.J. Beenakker, Physical Review Letters **67**, 3836–3839 (1991); **68**, 1442(E) (1992).
87. *Three "universal" mesoscopic Josephson effects,* C.W.J. Beenakker, in: Transport Phenomena in Mesoscopic Systems, edited by H. Fukuyama and T. Ando (Springer, Berlin, 1992): pp. 235–253.
88. *Suppression of shot noise in metallic diffusive conductors,* C.W.J. Beenakker and M. Büttiker, Physical Review B **46**, 1889(R) (1992).
89. *Theory of the thermopower of a quantum dot,* C.W.J. Beenakker and A.A.M. Staring, Physical Review B **46**, 9667–9676 (1992).
90. *Coulomb-blockade oscillations in the thermopower of a quantum dot,* A.A.M. Staring, L.W. Molenkamp, B.W. Alphenaar, H. van Houten, O.J.A. Buyk, M.A.A. Mabesoone, C.W.J. Beenakker, and C.T. Foxon, Europhysics Letters **22**, 57–62 (1993).
91. *Quantum transport in semiconductor–superconductor microjunctions,* C.W.J. Beenakker, Physical Review B **46**, 12841(R) (1992).
92. *Vector-mean-field theory of the fractional quantum Hall effect,* B. Rejaei and C.W.J. Beenakker, Physical Review B **46**, 15566(R) (1992).
93. *Mesoscopic fluctuations in the shot-noise power of metals,* M.J.M. de Jong and C.W.J. Beenakker, Physical Review B **46**, 13400–13406 (1992).
94. *Activated transport through a quantum dot with extended edge channels,* I.K. Marmorkos and C.W.J. Beenakker, Physical Review B **46**, 15562(R) (1992).
95. *Single-electron tunneling in the fractional quantum Hall effect regime,* C.W.J. Beenakker and B. Rejaei, Physica B **189**, 147–156 (1993).
96. *Polarization charge relaxation and the Coulomb staircase in ultra-small double-barrier tunnel junctions,* C. Schönenberger, H. van Houten, and C.W.J. Beenakker, Physica B **189**, 218–224 (1993).

97. *Conductance and supercurrent discontinuities in atomic size point contacts,* C.J. Muller, J.M. van Ruitenbeek, C.W.J. Beenakker, and R. de Bruyn Ouboter, Physica B **189**, 225–234 (1993).
98. *Coulomb charging of a quantum dot in the presence of adiabatically transmitted edge channels,* B.W. Alphenaar, A.A.M. Staring, H. van Houten, I.K. Marmorkos, C.W.J. Beenakker, and C.T. Foxon, Physica B **189**, 80–87 (1993).
99. *Computation of quantum-transport properties by random-matrix theory,* C.W.J. Beenakker, in: Computations for the Nano-Scale, edited by P.E. Blöchl, C. Joachim, and A.J. Fisher, NATO ASI Series E240 (Kluwer, Dordrecht, 1993): pp. 233–243.
100. *Universality in the random-matrix theory of quantum transport,* C.W.J. Beenakker, Physical Review Letters **70**, 1155–1158 (1993).
101. *Random-matrix theory of mesoscopic fluctuations in conductors and superconductors,* C.W.J. Beenakker, Physical Review B **47**, 15763–15775 (1993).
102. *Three signatures of phase-coherent Andreev reflection,* I.K. Marmorkos, C.W.J. Beenakker, and R.A. Jalabert, Physical Review B **48**, 2811(R) (1993).
103. *Long-range energy level interaction in small metallic particles,* R.A. Jalabert, J.-L. Pichard, and C.W.J. Beenakker, Europhysics Letters **24**, 1–6 (1993).
104. *Brownian-motion model for parametric correlations in the spectra of disordered metals,* C.W.J. Beenakker, Physical Review Letters **70**, 4126–4129 (1993).
105. *Quantum effects in thermal and thermo-electric transport in semiconductor nanostructures,* L.W. Molenkamp, H. van Houten, A.A.M. Staring, and C.W.J. Beenakker, Physica Scripta **T49**, 441–445 (1993).
106. *Random-matrix theory of parametric correlations in the spectra of disordered metals and chaotic billiards,* C.W.J. Beenakker and B. Rejaei, Physica A **203**, 61–90 (1994).
107. *Nonlogarithmic repulsion of transmission eigenvalues in a disordered wire,* C.W.J. Beenakker and B. Rejaei, Physical Review Letters **71**, 3689–3692 (1993).
108. *Principles of solid state electron optics,* H. van Houten and C.W.J. Beenakker, in: Confined Electrons and Photons: New Physics and Applications, edited by E. Burstein and C. Weisbuch, NATO ASI Series B340 (Plenum, New York, 1995): pp. 269–303.
109. *Sawtooth-like thermopower oscillations of a quantum dot in the Coulomb blockade regime,* L.W. Molenkamp, A.A.M. Staring, B.W. Alphenaar, H. van Houten, and C.W.J. Beenakker, Semiconductor Science and Technology **9**, 903–906 (1994).
110. *Universality of weak localization in disordered wires,* C.W.J. Beenakker, Physical Review B **49**, 2205–2207 (1994).
111. *Universality of Brézin and Zee's spectral correlator,* C.W.J. Beenakker, Nuclear Physics B **422**, 515–520 (1994).
112. *Exact solution for the distribution of transmission eigenvalues in a disordered wire and comparison with random-matrix theory,* C.W.J. Beenakker and B. Rejaei, Physical Review B **49**, 7499–7510 (1994).
113. *Scaling theory of conduction through a normal–superconductor microbridge,* C.W.J. Beenakker, B. Rejaei, and J.A. Melsen, Physical Review Letters **72**, 2470–2473 (1994).
114. *Doubled shot noise in disordered normal-metal–superconductor junctions,* M.J.M. de Jong and C.W.J. Beenakker, Physical Review B **49**, 16070(R) (1994).
115. *Exactly solvable scaling theory of conduction in disordered wires,* C.W.J. Beenakker, Modern Physics Letters B **8**, 469–478 (1994).
116. *Conductance fluctuations, weak localization, and shot noise for a ballistic constriction in a disordered wire,* C.W.J. Beenakker and J.A. Melsen, Physical Review B **50**, 2450–2457 (1994).
117. *Universal quantum signatures of chaos in ballistic transport,* R.A. Jalabert, J.-L. Pichard, and C.W.J. Beenakker, Europhysics Letters **27**, 255–260 (1994).
118. *Sub-Poissonian shot noise in a diffusive conductor,* M.J.M. de Jong and C.W.J. Beenakker, in: Coulomb and Interference Effects in Small Electronic Structures, edited by D.C. Glattli, M. Sanquer, and J. Trân Thanh Vân (Editions Frontières, 1994): pp. 427–435.
119. *Random-matrix theory of quantum size effects on nuclear magnetic resonance in metal particles,* C.W.J. Beenakker, Physical Review B **50**, 15170–15173 (1994).
120. *Reflectionless tunneling through a double-barrier NS junction,* J.A. Melsen and C.W.J. Beenakker, Physica B **203**, 219–225 (1994).
121. *Conductance distribution of a quantum dot with nonideal single-channel leads,* P.W. Brouwer and C.W.J. Beenakker, Physical Review B **50**, 11263(R) (1994).
122. *Quantum transport in semiconductor–superconductor microjunctions,* C.W.J. Beenakker, in: Mesoscopic Quantum Physics, edited by E. Akkermans, G. Montambaux, J.-L. Pichard, and J. Zinn-Justin (North-Holland, Amsterdam, 1995): pp. 279–324.
123. *Andreev reflection in ferromagnet–superconductor junctions,* M.J.M. de Jong and C.W.J. Beenakker, Physical Review Letters **74**, 1657-1660 (1995).
124. *Effect of a voltage probe on the phase-coherent conductance of a ballistic chaotic cavity,* P.W. Brouwer and C.W.J. Beenakker, Physical Review B **51**, 7739–7743 (1995).
125. *Semiclassical theory of shot-noise suppression,* M.J.M. de Jong and C.W.J. Beenakker, Physical Review B **51**, 16867–16870 (1995).

126. *Giant backscattering peak in angle-resolved Andreev reflection,* C.W.J. Beenakker, J.A. Melsen, and P.W. Brouwer, Physical Review B **51**, 13883(R) (1995).
127. *Conductance fluctuations in a disordered double-barrier junction,* J.A. Melsen and C.W.J. Beenakker, Physical Review B **51**, 14483–14489 (1995).
128. *Insensitivity to time-reversal symmetry breaking of universal conductance fluctuations with Andreev reflection,* P.W. Brouwer and C.W.J. Beenakker, Physical Review B **52**, 16772–16775 (1995).
129. *Weak localization coexisting with a magnetic field in a normal-metal–superconductor microbridge,* P.W. Brouwer and C.W.J. Beenakker, Physical Review B **52**, 3868(R) (1995).
130. *Accuracy of the diffusion equation with extrapolated-boundary condition for transmittance of light through a turbid medium,* J.C.J. Paasschens, M.J.M. de Jong, and C.W.J. Beenakker, arXiv:0807.1623.
131. *Non-perturbative calculation of the probability distribution of plane-wave transmission through a disordered waveguide,* S.A. van Langen, P.W. Brouwer, and C.W.J. Beenakker, Physical Review E **53**, 1344(R) (1996).
132. *Probability of reflection by a random laser,* C.W.J. Beenakker, J.C.J. Paasschens, and P.W. Brouwer, Physical Review Letters **76**, 1368–1371 (1996).
133. *Effect of the coupling to a superconductor on the level statistics of a metal grain in a magnetic field,* K.M. Frahm, P.W. Brouwer, J.A. Melsen, and C.W.J. Beenakker, Physical Review Letters **76**, 2981–2984 (1996).
134. *Semiclassical theory of shot noise in mesoscopic conductors,* M.J.M. de Jong and C.W.J. Beenakker, Physica A **230**, 219–248 (1996).
135. *Localization of light: Dual symmetry between absorption and amplification,* J.C.J. Paasschens, T.Sh. Misirpashaev, and C.W.J. Beenakker, Physical Review B **54**, 11887–11890 (1996).
136. *Induced superconductivity distinguishes chaotic from integrable billiards,* J.A. Melsen, P.W. Brouwer, K.M. Frahm, and C.W.J. Beenakker, Europhysics Letters **35**, 7–12 (1996).
137. *Quantum point contacts,* H. van Houten and C.W.J. Beenakker, Physics Today, **49** (7), 22–27 (1996).
138. *Diagrammatic method of integration over the unitary group, with applications to quantum transport in mesoscopic systems,* P.W. Brouwer and C.W.J. Beenakker, Journal of Mathematical Physics **37**, 4904–4934 (1996).
139. *Random-matrix theory of quantum transport,* C.W.J. Beenakker, Reviews of Modern Physics **69**, 731–808 (1997).
140. *Superconductor-proximity effect in chaotic and integrable billiards,* J.A. Melsen, P.W. Brouwer, K.M. Frahm, and C.W.J. Beenakker, Physica Scripta **T69**, 223–225 (1997).
141. *Localization in a disordered multi-mode waveguide with absorption or amplification,* T.Sh. Misirpashaev, J.C.J. Paasschens, and C.W.J. Beenakker, Physica A **236**, 189–201 (1997).
142. *Phase-dependent magnetoconductance fluctuations in a chaotic Josephson junction,* P.W. Brouwer and C.W.J. Beenakker, Physical Review B **54**, 12705(R) (1996).
143. *Reflectance fluctuations in an absorbing random waveguide,* T.Sh. Misirpashaev and C.W.J. Beenakker, Pis'ma v Zhurnal Éksperimental'noi i Teoreticheskoi Fiziki **64**, 289–293 (1996) [JETP Letters **64**, 319–324 (1996)].
144. *Brightness of a phase-conjugating mirror behind a random medium,* J.C.J. Paasschens, P.W. Brouwer, and C.W.J. Beenakker, Europhysics Letters **38**, 651–656 (1997).
145. *Fluctuating phase rigidity for a quantum chaotic system with partially broken time-reversal symmetry,* S.A. van Langen, P.W. Brouwer, and C.W.J. Beenakker, Physical Review E **55**, 1(R) (1997).
146. *Voltage-probe and imaginary potential models for dephasing in a chaotic quantum dot,* P.W. Brouwer and C.W.J. Beenakker, Physical Review B **55**, 4695–4702 (1997); **66**, 209901(E) (2002).
147. *Shot noise in mesoscopic systems,* M.J.M. de Jong and C.W.J. Beenakker, in: Mesoscopic Electron Transport, edited by L.L. Sohn, L.P. Kouwenhoven, and G. Schön, NATO ASI Series E345 (Kluwer, Dordrecht, 1997): pp. 225–258.
148. *Anomalous temperature dependence of the supercurrent through a chaotic Josephson junction,* P.W. Brouwer and C.W.J. Beenakker, Chaos, Solitons & Fractals **8**, 1249–1260 (1997).
149. *Lasing threshold and mode competition in chaotic cavities,* T.Sh. Misirpashaev and C.W.J. Beenakker, Physical Review A **57**, 2041–2045 (1998).
150. *Distribution of parametric conductance derivatives of a quantum dot,* P.W. Brouwer, S.A. van Langen, K.M. Frahm, M. Büttiker, and C.W.J. Beenakker, Physical Review Letters **79**, 913–916 (1997).
151. *Quantum mechanical time-delay matrix in chaotic scattering,* P.W. Brouwer, K.M. Frahm, and C.W.J. Beenakker, Physical Review Letters **78**, 4737–4740 (1997).
152. *Reflection of light from a disordered medium backed by a phase-conjugating mirror,* J.C.J. Paasschens, M.J.M. de Jong, P.W. Brouwer, and C.W.J. Beenakker, Physical Review A **56**, 4216–4228 (1997).
153. *Theory of directed localization in one dimension,* P.W. Brouwer, P.G. Silvestrov, and C.W.J. Beenakker, Physical Review B **56**, 4333(R) (1997).
154. *Spontaneous emission in chaotic cavities,* T.Sh. Misirpashaev, P.W. Brouwer, and C.W.J. Beenakker, Physical Review Letters **79**, 1841–1844 (1997).
155. *Thermopower of single-channel disordered and chaotic conductors,* S.A. van Langen, P.G. Silvestrov, and C.W.J. Beenakker, Superlattices and Microstructures **23**, 691–698 (1998).
156. *Thermal radiation and amplified spontaneous emission from a random medium,* C.W.J. Beenakker, Physical Review Letters **81**, 1829–1832 (1998).
157. *Berry phase and adiabaticity of a spin diffusing in a nonuniform magnetic field,* S.A. van Langen, H.P.A. Knops, J.C.J.

Paasschens, and C.W.J. Beenakker, Physical Review B, **59**, 2102–2110 (1999).

158. *Photon statistics of a random laser,* C.W.J. Beenakker, in: Diffuse Waves in Complex Media, edited by J.-P. Fouque, NATO Science Series C531 (Kluwer, Dordrecht, 1999): pp. 137–164.
159. *Distribution of the quantum mechanical time-delay matrix for a chaotic cavity,* P.W. Brouwer, K.M. Frahm, and C.W.J. Beenakker, Waves in Random Media, **9**, 91–104 (1999).
160. *Long-range correlation of thermal radiation,* M. Patra and C.W.J. Beenakker, Physical Review A, **59**, 43(R) (1999).
161. *Sub-Poissonian shot noise in nondegenerate diffusive conductors,* C.W.J. Beenakker, Physical Review Letters **82**, 2761–2763 (1999).
162. *Excitation spectrum of Andreev billiards with a mixed phase space,* H. Schomerus and C.W.J. Beenakker, Physical Review Letters **82**, 2951–2954 (1999).
163. *Non-Cayley-tree model for quasiparticle decay in a quantum dot,* X. Leyronas, J. Tworzydło, and C.W.J. Beenakker, Physical Review Letters **82**, 4894–4897 (1999).
164. *Kinetic theory of shot noise in nondegenerate diffusive conductors,* H. Schomerus, E.G. Mishchenko, and C.W.J. Beenakker, Physical Review B **60**, 5839–5850 (1999).
165. *Excess noise for coherent radiation propagating through amplifying random media,* M. Patra and C.W.J. Beenakker, Physical Review A **60**, 4059–4066 (1999).
166. *Photon shot noise,* C.W.J. Beenakker and M. Patra, Modern Physics Letters B **13**, 337–347 (1999).
167. *Quantum-limited linewidth of a chaotic laser cavity,* M. Patra, H. Schomerus, and C.W.J. Beenakker, Physical Review A **61**, 023810 (2000).
168. *Shot-noise in non-degenerate semiconductors with energy-dependent elastic scattering,* H. Schomerus, E.G. Mishchenko, and C.W.J. Beenakker, Lecture Notes in Physics **547**, 96–104 (2000).
169. *Radiative transfer theory for vacuum fluctuations,* E.G. Mishchenko and C.W.J. Beenakker, Physical Review Letters **83**, 5475–5478 (1999).
170. *Distribution of the reflection eigenvalues of a weakly absorbing chaotic cavity,* C.W.J. Beenakker and P.W. Brouwer, Physica E **9**, 463–466 (2001).
171. *Large Petermann factor in chaotic cavities with many scattering channels,* K.M. Frahm, H. Schomerus, M. Patra, and C.W.J. Beenakker, Europhysics Letters **49**, 48–54 (2000).
172. *High-frequency dynamics of wave localization,* C.W.J. Beenakker, K.J.H. van Bemmel, and P.W. Brouwer, Physical Review E **60**, 6313(R) (1999).
173. *Why does a metal–superconductor junction have a resistance?,* C.W.J. Beenakker, in: Quantum Mesoscopic Phenomena and Mesoscopic Devices in Microelectronics, edited by I.O. Kulik and R. Ellialtioglu, NATO Science Series C559 (Kluwer, Dordrecht, 2000): pp. 51–60.
174. *Effect of dephasing on charge-counting statistics in chaotic cavities,* Ya.M. Blanter, H. Schomerus, and C.W.J. Beenakker, Physica E **11**, 1–7 (2001).
175. *Propagation of squeezed radiation through amplifying or absorbing random media,* M. Patra and C.W.J. Beenakker, Physical Review A **61**, 063805 (2000).
176. *Quantum limit of the laser line width in chaotic cavities and statistics of residues of scattering matrix poles,* H. Schomerus, K.M. Frahm, M. Patra, and C.W.J. Beenakker, Physica A **278**, 469–496 (2000).
177. *Search for two-scale localization in disordered wires in a magnetic field,* H. Schomerus and C.W.J. Beenakker, Physical Review Letters **84**, 3927-3929 (2000).
178. *Hierarchical model for the scale-dependent velocity of waves in random media,* J. Tworzydło and C.W.J. Beenakker, Physical Review Letters **85**, 674–676 (2000).
179. *Scaling at the chaos threshold for interacting electrons in a quantum dot,* X. Leyronas, P.G. Silvestrov, and C.W.J. Beenakker, Physical Review Letters **84**, 3414–3417 (2000).
180. *Photonic excess noise and wave localization,* C.W.J. Beenakker, M. Patra, and P.W. Brouwer, Physical Review A **61**, 051801(R) (2000).
181. *Frequency dependence of the photonic noise spectrum in an absorbing or amplifying diffusive medium,* E.G. Mishchenko, M. Patra, and C.W.J. Beenakker, European Physical Journal D **13**, 289–297 (2001).
182. *Coherent backscattering effect on wave dynamics in a random medium,* H. Schomerus, K.J.H. van Bemmel, and C.W.J. Beenakker, Europhysics Letters **52**, 518–524 (2000).
183. *Signature of wave localization in the time dependence of a reflected pulse,* M. Titov and C.W.J. Beenakker, Physical Review Letters **85**, 3388–3391 (2000).
184. *Universal gap fluctuations in the superconductor proximity effect,* M.G. Vavilov, P.W. Brouwer, V. Ambegaokar, and C.W.J. Beenakker, Physical Review Letters, **86**, 874–877 (2001).
185. *Counting statistics of photons produced by electronic shot noise,* C.W.J. Beenakker and H. Schomerus, Physical Review Letters **86**, 700–703 (2001).
186. *Localization-induced coherent backscattering effect in wave dynamics,* H. Schomerus, K.J.H. van Bemmel, and C.W.J. Beenakker, Physical Review E **63**, 026605 (2001).
187. *Single-mode delay time statistics for scattering by a chaotic cavity,* K.J.H. van Bemmel, H. Schomerus, and C.W.J. Beenakker, Physica Scripta **T90**, 278–282 (2001).
188. *Dynamics of localization in a waveguide,* C.W.J. Beenakker, in: Photonic Crystals and Light Localization in the 21st

Century, edited by C.M. Soukoulis, NATO Science Series C563 (Kluwer, Dordrecht, 2001): pp. 489–508.

189. *Effect of inelastic scattering on the average Coulomb-blockade peak height in quantum dots,* C.W.J. Beenakker, H. Schomerus, and P.G. Silvestrov, Physical Review B **64**, 033307 (2001).
190. *Limits to error correction in quantum chaos,* P.G. Silvestrov, H. Schomerus, and C.W.J. Beenakker, Physical Review Letters **86**, 5192–5195 (2001).
191. *Andreev levels in a single-channel conductor,* M. Titov, N.A. Mortensen, H. Schomerus, and C.W.J. Beenakker, Physical Review B **64**, 134206 (2001).
192. *Multiple-path interferometer with a single quantum obstacle,* H. Schomerus, Y. Noat, J. Dalibard, and C.W.J. Beenakker, Europhysics Letters **57**, 651–657 (2002).
193. *Negative superfluid density: Mesoscopic fluctuations and reverse of the supercurrent through a disordered Josephson junction,* M. Titov, Ph. Jacquod, and C.W.J. Beenakker, Physical Review B **65**, 012504 (2002).
194. *Manipulation of photon statistics of highly degenerate incoherent radiation,* M. Kindermann, Yu.V. Nazarov, and C.W.J. Beenakker, Physical Review Letters **88**, 063601 (2002).
195. *Microscopic versus mesoscopic local density of states in one-dimensional localization,* H. Schomerus, M. Titov, P.W. Brouwer, and C.W.J. Beenakker, Physical Review B **65**, 121101(R) (2002).
196. *Golden rule decay versus Lyapunov decay of the quantum Loschmidt echo,* Ph. Jacquod, P.G. Silvestrov, and C.W.J. Beenakker, Physical Review E **64**, 055203(R) (2001).
197. *Dynamic effect of phase conjugation on wave localization,* K.J.H. van Bemmel, M. Titov, and C.W.J. Beenakker, Physical Review B **65**, 174203 (2002).
198. *Electromechanical noise in a diffusive conductor,* A.V. Shytov, L.S. Levitov, and C.W.J. Beenakker, Physical Review Letters **88**, 228303 (2002).
199. *Ehrenfest times for classically chaotic systems,* P.G. Silvestrov and C.W.J. Beenakker, Physical Review E **65**, 035208(R) (2002).
200. *Ehrenfest-time-dependent excitation gap in a chaotic Andreev billiard,* I. Adagideli and C.W.J. Beenakker, Physical Review Letters **89**, 237002 (2002).
201. *Quantum optical communication rates through an amplifying random medium,* J. Tworzydło and C.W.J. Beenakker, Physical Review Letters **89**, 043902 (2002).
202. *Decay of the Loschmidt Echo for quantum states with sub-Planck scale structures,* Ph. Jacquod, I. Adagideli, and C.W.J. Beenakker, Physical Review Letters **89**, 154103 (2002).
203. *Anomalous power law of quantum reversibility for classically regular dynamics,* Ph. Jacquod, I. Adagideli, and C.W.J. Beenakker, Europhysics Letters **61**, 729–735 (2003).
204. *Momentum noise in a quantum point contact,* A. Tajic, M. Kindermann, and C.W.J. Beenakker, Physical Review B **66**, 241301(R) (2002).
205. *Quantum theory of electromechanical noise and momentum transfer statistics,* M. Kindermann and C.W.J. Beenakker, Physical Review B **66**, 224106 (2002).
206. *Hypersensitivity to perturbations of quantum-chaotic wave-packet dynamics,* P.G. Silvestrov, J. Tworzydło, and C.W.J. Beenakker, Physical Review E **67**, 025204(R) (2003).
207. *Crossover from weak localization to weak antilocalization in a disordered microbridge,* M.G.A. Crawford, P.W. Brouwer, and C.W.J. Beenakker, Physical Review B **67**, 115313 (2003).
208. *Adiabatic quantization of Andreev quantum billiard levels,* P.G. Silvestrov, M.C. Goorden, and C.W.J. Beenakker, Physical Review Letters **90**, 116801 (2003).
209. *Distribution of voltage fluctuations in a current-biased conductor,* M. Kindermann, Yu.V. Nazarov, and C.W.J. Beenakker, Physical Review Letters **90**, 246805 (2003).
210. *Quantum shot noise,* C.W.J. Beenakker and C. Schönenberger, Physics Today, **56** (5), 37–42 (2003); Japanese translation in: Parity, **19** (2), 14–23 (2004).
211. *Scattering theory of plasmon-assisted entanglement transfer and distillation,* J.L. van Velsen, J. Tworzydło, and C.W.J. Beenakker, Physical Review A **68**, 043807 (2003).
212. *Quantum Andreev map: A paradigm of quantum chaos in superconductivity,* Ph. Jacquod, H. Schomerus, and C.W.J. Beenakker, Physical Review Letters **90**, 207004 (2003).
213. *Temperature-dependent third cumulant of tunneling noise,* C.W.J. Beenakker, M. Kindermann, and Yu.V. Nazarov, Physical Review Letters **90**, 176802 (2003).
214. *Noiseless scattering states in a chaotic cavity,* P.G. Silvestrov, M.C. Goorden, and C.W.J. Beenakker, Physical Review B **67**, 241301(R) (2003).
215. *Dynamical model for the quantum-to-classical crossover of shot noise,* J. Tworzydło, A. Tajic, H. Schomerus, and C.W.J. Beenakker, Physical Review B **68**, 115313 (2003).
216. *Reply to Comment on "Ehrenfest times for classically chaotic systems",* P.G. Silvestrov and C.W.J. Beenakker, Physical Review E **68**, 038202 (2003).
217. *Proposal for production and detection of entangled electron-hole pairs in a degenerate electron gas,* C.W.J. Beenakker, C. Emary, M. Kindermann, and J.L. van Velsen, Physical Review Letters **91**, 147901 (2003).
218. *Feedback of the electromagnetic environment on current and voltage fluctuations out of equilibrium,* M. Kindermann, Yu.V. Nazarov, and C.W.J. Beenakker, Physical Review B **69**, 035336 (2004).

219. *Quasiclassical fluctuations of the superconductor proximity gap in a chaotic system,* M.C. Goorden, Ph. Jacquod, and C.W.J. Beenakker, Physical Review B **68**, 220501(R) (2003).
220. *Quantum teleportation by particle-hole annihilation in the Fermi sea,* C.W.J. Beenakker and M. Kindermann, Physical Review Letters **92**, 056801 (2004).
221. *Dephasing of entangled electron-hole pairs in a degenerate electron gas,* J.L. van Velsen, M. Kindermann, and C.W.J. Beenakker, Turkish Journal of Physics **27**, 323–329 (2003).
222. *Entanglement production in a chaotic quantum dot,* C.W.J. Beenakker, M. Kindermann, C.M. Marcus, and A. Yacoby, in: Fundamental Problems of Mesoscopic Physics: Interactions and Decoherence, edited by I.V. Lerner, B.L. Altshuler, and Y. Gefen, NATO Science Series II. Vol. 154 (Kluwer, Dordrecht, 2004): pp. 167–177.
223. *Production and detection of three-qubit entanglement in the Fermi sea,* C.W.J. Beenakker, C. Emary, and M. Kindermann, Physical Review B **69**, 115320 (2004).
224. *Quantum-to-classical crossover of mesoscopic conductance fluctuations,* J. Tworzydło, A. Tajic, and C.W.J. Beenakker, Physical Review B **69**, 165318 (2004).
225. *Relation between entanglement measures and Bell inequalities for three qubits,* C. Emary and C.W.J. Beenakker, Physical Review A **69**, 032317 (2004).
226. *Entanglement in mesoscopic structures: Role of projection,* A.V. Lebedev, G. Blatter, C.W.J. Beenakker, and G.B. Lesovik, Physical Review B **69**, 235312 (2004).
227. *Charge detection enables free-electron quantum computation,* C.W.J. Beenakker, D.P. DiVincenzo, C. Emary, and M. Kindermann, Physical Review Letters **93**, 020501 (2004).
228. *Teleportatie van elektriciteit,* C.W.J. Beenakker, Nederlands Tijdschrift voor Natuurkunde, **70** (4), 112–113 (2004).
229. *Transition from pure-state to mixed-state entanglement by random scattering,* J.L. van Velsen and C.W.J. Beenakker, Physical Review A **70**, 032325 (2004).
230. *Antibunched photons emitted by a quantum point contact out of equilibrium,* C.W.J. Beenakker and H. Schomerus, Physical Review Letters **93**, 096801 (2004).
231. *Weak localization of the open kicked rotator,* J. Tworzydło, A. Tajic, and C.W.J. Beenakker, Physical Review B **70**, 205324 (2004).
232. *Andreev billiards,* C.W.J. Beenakker, Lecture Notes in Physics **667**, 131–174 (2005).
233. *Exponential sensitivity to dephasing of electrical conduction through a quantum dot,* J. Tworzydło, A. Tajic, H. Schomerus, P.W. Brouwer, and C.W.J. Beenakker, Physical Review Letters **93**, 186806 (2004).
234. *Optimal spin-entangled electron-hole pair pump,* C.W.J. Beenakker, M. Titov, and B. Trauzettel, Physical Review Letters **94**, 186804 (2005).
235. *Emission of polarization-entangled microwave photons from a pair of quantum dots,* C. Emary, B. Trauzettel, and C.W.J. Beenakker, Physical Review Letters **95**, 127401 (2005).
236. *Stub model for dephasing in a quantum dot,* C.W.J. Beenakker and B. Michaelis, Journal of Physics A **38** 10639–10646 (2005).
237. *Transfer of entanglement from electrons to photons by optical selection rules,* M. Titov, B. Trauzettel, B. Michaelis, and C.W.J. Beenakker, New Journal of Physics **7**, 186 (2005).
238. *Quantum-to-classical crossover for Andreev billiards in a magnetic field,* M.C. Goorden, Ph. Jacquod, and C.W.J. Beenakker, Physical Review B **72**, 064526 (2005).
239. *All-electronic coherent population trapping in quantum dots,* B. Michaelis, C. Emary, and C.W.J. Beenakker, Europhysics Letters **73**, 677–683 (2006).
240. *Stroboscopic model of transport through a quantum dot with spin-orbit scattering,* J.H. Bardarson, J. Tworzydło, and C.W.J. Beenakker, Physical Review B **72**, 235305 (2005).
241. *Electron-hole entanglement in the Fermi sea,* C.W.J. Beenakker, in: International School of Physics Enrico Fermi, Vol. 162, *Quantum Computers, Algorithms and Chaos*, edited by G. Casati, D.L. Shepelyansky, P. Zoller, and G. Benenti (IOS Press, Amsterdam, 2006): pp. 307–347.
242. *Voltage probe model of spin decay in a chaotic quantum dot with applications to spin-flip noise and entanglement production,* B. Michaelis and C.W.J. Beenakker, Physical Review B **73**, 115329 (2006).
243. *Excess conductance of a spin-filtering quantum dot,* C.W.J. Beenakker, Physical Review B **73**, 201304(R) (2006).
244. *Deterministic quantum state transfer from an electronic charge qubit to a photonic polarization qubit,* L.J.P. Ament and C.W.J. Beenakker, Physical Review B **73**, 121307(R) (2006).
245. *Parity meter for charge qubits: An efficient quantum entangler,* B. Trauzettel, A.N. Jordan, C.W.J. Beenakker, and M. Büttiker, Physical Review B **73**, 235331 (2006).
246. *Sub-Poissonian shot noise in graphene,* J. Tworzydło, B. Trauzettel, M. Titov, A. Rycerz, and C.W.J. Beenakker, Physical Review Letters **96**, 246802 (2006).
247. *How spin-orbit interaction can cause electronic shot noise,* A. Ossipov, J.H. Bardarson, J. Tworzydło, M. Titov, and C.W.J. Beenakker, Europhysics Letters **76**, 115–120 (2006).
248. *Specular Andreev reflection in graphene,* C.W.J. Beenakker, Physical Review Letters **97**, 067007 (2006).
249. *Josephson effect in ballistic graphene,* M. Titov and C.W.J. Beenakker, Physical Review B **74**, 041401(R) (2006).
250. *Counting statistics of coherent population trapping in quantum dots,* C.W. Groth, B. Michaelis, and C.W.J. Beenakker, Physical Review B **74**, 125315 (2006).

251. *Degradation of electron-hole entanglement by spin-orbit coupling,* J.H. Bardarson and C.W.J. Beenakker, Physical Review B **74**, 235307 (2006).
252. *Valley filter and valley valve in graphene,* A. Rycerz, J. Tworzydło, and C.W.J. Beenakker, Nature Physics **3**, 172–175 (2007).
253. *Ballistic transmission through a graphene bilayer,* I. Snyman and C.W.J. Beenakker, Physical Review B **75**, 045322 (2007).
254. *Excitation gap of a graphene channel with superconducting boundaries,* M. Titov, A. Ossipov, and C.W.J. Beenakker, Physical Review B **75**, 045417 (2007).
255. *Pseudodiffusive conduction at the Dirac point of a normal-superconductor junction in graphene,* A.R. Akhmerov and C.W.J. Beenakker, Physical Review B **75**, 045426 (2007).
256. *Anomalously large conductance fluctuations in weakly disordered graphene,* A. Rycerz, J. Tworzydło, and C.W.J. Beenakker, Europhysics Letters **79**, 57003 (2007).
257. *Effect of spin-orbit coupling on the excitation spectrum of Andreev billiards,* B. Béri, J.H. Bardarson, and C.W.J. Beenakker, Physical Review B **75**, 165307 (2007).
258. *Detection of valley polarization in graphene by a superconducting contact,* A.R. Akhmerov and C.W.J. Beenakker, Physical Review Letters **98**, 157003 (2007).
259. *Hempel's dilemma and the physics of computation,* C.W.J. Beenakker, in: *Knowledge in Ferment: Dilemmas in Science, Scholarship and Society*, edited by A. in 't Groen, H.J. de Jonge, E. Klasen, H. Papma and P. van Slooten (Leiden University Press, Leiden, 2007): pp. 65–70.
260. *Extremal transmission at the Dirac point of a photonic band structure,* R.A. Sepkhanov, Ya.B. Bazaliy, and C.W.J. Beenakker, Physical Review A **75**, 063813 (2007).
261. *Reentrance effect in a graphene n-p-n junction coupled to a superconductor,* A. Ossipov, M. Titov, and C.W.J. Beenakker, Physical Review B **75**, 241401(R) (2007).
262. *One-parameter scaling at the Dirac point in graphene,* J. Bardarson, J. Tworzydło, P.W. Brouwer, and C.W.J. Beenakker, Physical Review Letters **99**, 106801 (2007).
263. *Valley-isospin dependence of the quantum Hall effect in a graphene p-n junction,* J. Tworzydło, I. Snyman, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **76**, 035411 (2007).
264. *Aharonov-Bohm effect and broken valley-degeneracy in a graphene ring,* P. Recher, B. Trauzettel, A. Rycerz, Ya.M. Blanter, C.W.J. Beenakker, and A.F. Morpurgo, Physical Review B **76**, 235404 (2007).
265. *Splitting of Andreev levels in a Josephson junction by spin-orbit coupling,* B. Béri, J.H. Bardarson, and C.W.J. Beenakker, Physical Review B **77**, 045311 (2008).
266. *Aharonov-Bohm effect for a valley-polarized current in graphene,* A. Rycerz and C.W.J. Beenakker, arXiv:0709.3397.
267. *Correspondence between Andreev reflection and Klein tunneling in bipolar graphene,* C.W.J. Beenakker, A.R. Akhmerov, P. Recher, and J. Tworzydło, Physical Review B **77**, 075409 (2008).
268. *Andreev reflection and Klein tunneling in graphene,* C.W.J. Beenakker, Reviews of Modern Physics **80**, 1337 (2008).
269. *Boundary conditions for Dirac fermions on a terminated honeycomb lattice,* A.R. Akhmerov and C.W.J. Beenakker, Physical Review B **77**, 085423 (2008).
270. *Numerical test of the theory of pseudo-diffusive transmission at the Dirac point of a photonic band structure,* R.A. Sepkhanov and C.W.J. Beenakker, Optics Communications **281**, 5267 (2008).
271. *Theory of the valley-valve effect in graphene nanoribbons,* A.R. Akhmerov, J.H. Bardarson, A. Rycerz, and C.W.J. Beenakker, Physical Review B **77**, 205416 (2008).
272. *Electronic shot noise in fractal conductors,* C.W. Groth, J. Tworzydło, and C.W.J. Beenakker, Physical Review Letters **100**, 176804 (2008).
273. *Proposed method for detection of the pseudospin-1/2 Berry phase in a photonic crystal with a Dirac spectrum,* R.A. Sepkhanov, J. Nilsson, and C.W.J. Beenakker, Physical Review B **78**, 045122 (2008).
274. *Calculation of the conductance of a graphene sheet using the Chalker-Coddington network model,* I. Snyman, J. Tworzydło, and C.W.J. Beenakker, Physical Review B **78**, 045118 (2008).
275. *Splitting of a Cooper pair by a pair of Majorana bound states,* J. Nilsson, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review Letters **101**, 120403 (2008).
276. *Extinction of coherent backscattering by a disordered photonic crystal with a Dirac spectrum,* R.A. Sepkhanov, A. Ossipov, and C.W.J. Beenakker, Europhysics Letters **85**, 14005 (2009).
277. *Finite difference method for transport properties of massless Dirac fermions,* J. Tworzydło, C.W. Groth, and C.W.J. Beenakker, Physical Review B **78**, 235438 (2008).
278. *Nonalgebraic length dependence of transmission through a chain of barriers with a Lévy spacing distribution,* C.W.J. Beenakker, C.W. Groth, and A.R. Akhmerov, Physical Review B **79**, 024204 (2009).
279. *Quantum limit of the triplet proximity effect in half-metal–superconductor junctions,* B. Béri, J.N. Kupferschmidt, C.W.J. Beenakker, and P.W. Brouwer, Physical Review B **79**, 024517 (2009).
280. *Quantum Goos-Hänchen effect in graphene,* C.W.J. Beenakker, R.A. Sepkhanov, A.R. Akhmerov, and J. Tworzydło, Physical Review Letters **102**, 146804 (2009).
281. *Two-photon speckle as a probe of multi-dimensional entanglement,* C.W.J. Beenakker, J.W.F. Venderbos, and M.P. van Exter, Physical Review Letters **102**, 193601 (2009).
282. *Electrically detected interferometry of Majorana fermions in a topological insulator,* A.R. Akhmerov, J. Nilsson, and C.W.J.

Beenakker, Physical Review Letters **102**, 216404 (2009).

283. *Applications of random matrix theory to condensed matter and optical physics,* C.W.J. Beenakker, in: The Oxford Handbook of Random Matrix Theory, edited by G. Akemann, J. Baik, and P. Di Francesco (Oxford University Press, Oxford, 2011): pp. 723–758.
284. *Switching of electrical current by spin precession in the first Landau level of an inverted-gap semiconductor,* A.R. Akhmerov, C.W. Groth, J. Tworzydło, and C.W.J. Beenakker, Physical Review B **80**, 195320 (2009).
285. *Theory of the topological Anderson insulator,* C.W. Groth, M. Wimmer, A.R. Akhmerov, J. Tworzydło, and C.W.J. Beenakker, Physical Review Letters **103**, 196805 (2009).
286. *Pseudodiffusive transmission of nodal Dirac fermions through a clean d-wave superconductor,* J.K. Asbóth, A.R. Akhmerov, A.C. Berceanu, and C.W.J. Beenakker, Physical Review B **80**, 224517 (2009).
287. *Hartman effect and spin precession in graphene,* R.A. Sepkhanov, M.V. Medvedyeva, and C.W.J. Beenakker, Physical Review B **80**, 245433 (2009).
288. *Domain wall in a chiral p-wave superconductor: A pathway for electrical current,* I. Serban, B. Béri, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review Letters **104**, 147001 (2010).
289. *Nonzero temperature effects on antibunched photons emitted by a quantum point contact out of equilibrium,* I.C. Fulga, F. Hassler, and C.W.J. Beenakker, Physical Review B **81**, 115331 (2010).
290. *Absence of a metallic phase in charge-neutral graphene with a random gap,* J.H. Bardarson, M.V. Medvedyeva, J. Tworzydło, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **81**, 121414(R) (2010).
291. *Majorana bound states without vortices in topological superconductors with electrostatic defects,* M. Wimmer, A.R. Akhmerov, M.V. Medvedyeva, J. Tworzydło, and C.W.J. Beenakker, Physical Review Letters **105**, 046803 (2010).
292. *Effective mass and tricritical point for lattice fermions localized by a random mass,* M.V. Medvedyeva, J. Tworzydło, and C.W.J. Beenakker, Physical Review B **81**, 214203 (2010).
293. *Random-matrix theory of thermal conduction in superconducting quantum dots,* J.P. Dahlhaus, B. Béri, and C.W.J. Beenakker, Physical Review B **82**, 014536 (2010).
294. *Anyonic interferometry without anyons: How a flux qubit can read out a topological qubit,* F. Hassler, A.R. Akhmerov, C.-Y. Hou, and C.W.J. Beenakker, New Journal of Physics **12**, 125002 (2010).
295. *Flat-lens focusing of electrons on the surface of a topological insulator,* F. Hassler, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **82**, 125423 (2010).
296. *Geodesic scattering by surface deformations of a topological insulator,* J.P. Dahlhaus, C.-Y. Hou, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **82**, 085312 (2010).
297. *Quantized conductance at the Majorana phase transition in a disordered superconducting wire,* A.R. Akhmerov, J.P. Dahlhaus, F. Hassler, M. Wimmer, and C.W.J. Beenakker, Physical Review Letters **106**, 057001 (2011).
298. *Random-matrix theory of Andreev reflection from a topological superconductor,* C.W.J. Beenakker, J.P. Dahlhaus, M. Wimmer, and A.R. Akhmerov, Physical Review B **83**, 085413 (2011).
299. *Effects of disorder on the transmission of nodal fermions through a d-wave superconductor,* J.K. Asbóth, A.R. Akhmerov, M.V. Medvedyeva, and C.W.J. Beenakker, Physical Review B **83**, 134519 (2011).
300. *Scattering formula for the topological quantum number of a disordered multi-mode wire,* I.C. Fulga, F. Hassler, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **83**, 155429 (2011).
301. *Quantum point contact as a probe of a topological superconductor,* M. Wimmer, A.R. Akhmerov, J.P. Dahlhaus, and C.W.J. Beenakker, New Journal of Physics **13**, 053016 (2011).
302. *Spin-triplet supercurrent carried by quantum Hall edge states through a Josephson junction,* J.A.M. van Ostaay, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **83**, 195441 (2011).
303. *The top-transmon: a hybrid superconducting qubit for parity-protected quantum computation,* F. Hassler, A.R. Akhmerov, and C.W.J. Beenakker, New Journal of Physics **13**, 095004 (2011).
304. *Nernst effect beyond the relaxation-time approximation,* D.I. Pikulin, C.-Y. Hou, and C.W.J. Beenakker, Physical Review B **84**, 035133 (2011).
305. *Transmission probability through a Lévy glass and comparison with a Lévy walk,* C.W. Groth, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review E **85**, 021138 (2012).
306. *Quantum Hall effect in a one-dimensional dynamical system,* J.P. Dahlhaus, J.M. Edge, J. Tworzydło, and C.W.J. Beenakker, Physical Review B **84**, 115133 (2011).
307. *Majorana fermions emerging from magnetic nanoparticles on a superconductor without spin-orbit coupling,* T.-P. Choy, J.M. Edge, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **84**, 195442 (2011).
308. *Coulomb stability of the 4π-periodic Josephson effect of Majorana fermions,* B. van Heck, F. Hassler, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **84**, 180502(R) (2011).
309. *Dirac boundary condition at the reconstructed zigzag edge of graphene,* J.A.M. van Ostaay, A.R. Akhmerov, C.W.J. Beenakker, and M. Wimmer, Physical Review B **84**, 195434 (2011).
310. *Topological quantum number and critical exponent from conductance fluctuations at the quantum Hall plateau transition,* I.C. Fulga, F. Hassler, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **84**, 245447 (2011).
311. *Coulomb-assisted braiding of Majorana fermions in a Josephson junction array,* B. van Heck, A.R. Akhmerov, F. Hassler, M. Burrello, and C.W.J. Beenakker, New Journal of Physics **14**, 035019 (2012).
312. *Measuring Tr ρ^n on single copies of ρ using random measurements,* S.J. van Enk and C.W.J. Beenakker, Physical Review

Letters **108**, 110503 (2012).

313. *Search for Majorana fermions in superconductors,* C.W.J. Beenakker, Annual Review of Condensed Matter Physics **4**, 113–136 (2013).
314. *Metal–topological-insulator transition in the quantum kicked rotator with $\mathbb{Z}_2$ symmetry,* E.P.L. van Nieuwenburg, J.M. Edge, J.P. Dahlhaus, J. Tworzydło, and C.W.J. Beenakker, Physical Review B **85**, 165131 (2012).
315. *Thermal metal-insulator transition in a helical topological superconductor,* I.C. Fulga, A.R. Akhmerov, J. Tworzydło, B. Béri, and C.W.J. Beenakker, Physical Review B **86**, 054505 (2012).
316. *Metallic phase of the quantum Hall effect in four-dimensional space,* J.M. Edge, J. Tworzydło, and C.W.J. Beenakker, Physical Review Letters **109**, 135701 (2012).
317. *Andreev reflection from a topological superconductor with chiral symmetry,* M. Diez, J.P. Dahlhaus, M. Wimmer, and C.W.J. Beenakker, Physical Review B **86**, 094501 (2012).
318. *A zero-voltage conductance peak from weak antilocalization in a Majorana nanowire,* D.I. Pikulin, J.P. Dahlhaus, M. Wimmer, H. Schomerus, and C.W.J. Beenakker, New Journal of Physics **14**, 125011 (2012).
319. *Scattering theory of topological invariants in nodal superconductors,* J.P. Dahlhaus, M. Gibertini, and C.W.J. Beenakker, Physical Review B **86**, 174520 (2012).
320. *Fermion-parity anomaly of the critical supercurrent in the quantum spin-Hall effect,* C.W.J. Beenakker, D.I. Pikulin, T. Hyart, H. Schomerus, and J.P. Dahlhaus, Physical Review Letters **110**, 017003 (2013).
321. *Phase-locked magnetoconductance oscillations as a probe of Majorana edge states,* M. Diez, I.C. Fulga, D.I. Pikulin, M. Wimmer, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **87**, 125406 (2013).
322. *Flux-controlled quantum computation with Majorana fermions,* T. Hyart, B. van Heck, I.C. Fulga, M. Burrello, A.R. Akhmerov and C.W.J. Beenakker, Physical Review B **88**, 035121 (2013).
323. *Proposal for the detection and braiding of Majorana fermions in a quantum spin Hall insulator,* S. Mi, D.I. Pikulin, M. Wimmer, and C.W.J. Beenakker, Physical Review B **87**, 241405(R) (2013).
324. *Wigner-Poisson statistics of topological transitions in a Josephson junction,* C.W.J. Beenakker, J.M. Edge, J.P. Dahlhaus, D.I. Pikulin, S. Mi, and M. Wimmer, Physical Review Letters **111**, 037001 (2013).
325. *Quantum phase transitions of a disordered antiferromagnetic topological insulator,* P. Baireuther, J.M. Edge, I.C. Fulga, C.W.J. Beenakker, and J. Tworzydło, Physical Review B **89**, 035410 (2014).
326. *Annihilation of colliding Bogoliubov quasiparticles reveals their Majorana nature,* C.W.J. Beenakker, Physical Review Letters **112**, 070604 (2014).
327. *Disorder and magnetic-field induced breakdown of helical edge conduction in an inverted electron-hole bilayer,* D.I. Pikulin, T. Hyart, S. Mi, J. Tworzydło, M. Wimmer, and C.W.J. Beenakker, Physical Review B **89**, 161403(R) (2014); **89**, 199901(E) (2014).
328. *Emergence of massless Dirac fermions in graphene's Hofstadter butterfly at switches of the quantum Hall phase connectivity,* M. Diez, J.P. Dahlhaus, M. Wimmer, and C.W.J. Beenakker, Physical Review Letters **112**, 196602 (2014).
329. *Bimodal conductance distribution of Kitaev edge modes in topological superconductors,* M. Diez, I.C. Fulga, D.I. Pikulin, J. Tworzydło, and C.W.J. Beenakker, New Journal of Physics **16**, 063049 (2014).
330. *Time-delay matrix, midgap spectral peak, and thermopower of an Andreev billiard,* M. Marciani, P.W. Brouwer, and C.W.J. Beenakker, Physical Review B **90**, 045403 (2014).
331. *X-shaped and Y-shaped Andreev resonance profiles in a superconducting quantum dot,* S. Mi, D.I. Pikulin, M. Marciani, and C.W.J. Beenakker, Zhurnal Éksperimental'noi i Teoreticheskoi Fiziki **146**, 1165–1175 (2014) [JETP **119**, 1018–1027 (2014)].
332. *Quantumrekenen met Majoranadeeltjes,* C.W.J. Beenakker, Nederlands Tijdschrift voor Natuurkunde **80** (6), 230–232 (2014).
333. *Random-matrix theory of Majorana fermions and topological superconductors,* C.W.J. Beenakker, Reviews of Modern Physics **87**, 1037 (2015).
334. *Minimal circuit for a flux-controlled Majorana qubit in a quantum spin-Hall insulator,* B. van Heck, T. Hyart, and C.W.J. Beenakker, Physica Scripta **T164**, 014007 (2015).
335. *Many-body characterization of particle-conserving topological superfluids,* G. Ortiz, J. Dukelsky, E. Cobanera, C. Esebbag, and C. Beenakker, Physical Review Letters **113**, 267002 (2014).
336. *Andreev-Bragg reflection from an Amperian superconductor,* P. Baireuther, T. Hyart, B. Tarasinski, and C.W.J. Beenakker, Physical Review Letters **115**, 097001 (2015).
337. *Even-odd flux quanta effect in the Fraunhofer oscillations of an edge-channel Josephson junction,* B. Baxevanis, V.P. Ostroukh, and C.W.J. Beenakker, Physical Review B **91**, 041409(R) (2015).
338. *Effect of chiral symmetry on chaotic scattering from Majorana zero modes,* H. Schomerus, M. Marciani, and C.W.J. Beenakker, Physical Review Letters **114**, 166803 (2015).
339. *Giant negative magnetoresistance driven by spin-orbit coupling at the $LaAlO_3/SrTiO_3$ interface,* M. Diez, A.M.R.V.L. Monteiro, G. Mattoni, E. Cobanera, T. Hyart, E. Mulazimoglu, N. Bovenzi, C.W.J. Beenakker, and A.D. Caviglia, Physical Review Letters **115**, 016803 (2015).
340. *Quench dynamics of fermion-parity switches in a Josephson junction,* B. Tarasinski, D. Chevallier, J.A. Hutasoit, B. Baxevanis, and C.W.J. Beenakker, Physical Review B **92**, 144306 (2015).
341. *Statistical translation invariance protects a topological insulator from interactions,* A. Milsted, L. Seabra, I.C. Fulga, C.W.J.

Beenakker, and E. Cobanera, Physical Review B **92**, 085139 (2015).

342. *Topologically protected charge transfer along the edge of a chiral p-wave superconductor,* N.V. Gnezdilov, B. van Heck, M. Diez, J.A. Hutasoit, and C.W.J. Beenakker, Physical Review B **92**, 121406(R) (2015).
343. *Effect of a tunnel barrier on the scattering from a Majorana bound state in an Andreev billiard,* M. Marciani, H. Schomerus, and C.W.J. Beenakker, Physica E **77**, 54–64 (2016). [Reprinted in Physica E **82**, 106–116 (2016).]
344. *A road to reality with topological superconductors,* C.W.J. Beenakker and L.P. Kouwenhoven, Nature Physics **12**, 618–621 (2016).
345. *Attractor-repeller pair of topological zero-modes in a nonlinear quantum walk,* Y. Gerasimenko, B. Tarasinski, and C.W.J. Beenakker, Physical Review A **93**, 022329 (2016).
346. *Scattering theory of the chiral magnetic effect in a Weyl semimetal: Interplay of bulk Weyl cones and surface Fermi arcs,* P. Baireuther, J.A. Hutasoit, J. Tworzydło, and C.W.J. Beenakker, New Journal of Physics **18**, 045009 (2016).
347. *Magnetic breakdown and Klein tunneling in a type-II Weyl semimetal,* T.E. O'Brien, M. Diez, and C.W.J. Beenakker, Physical Review Letters **116**, 236401 (2016).
348. *Bringing order to the expanding fermion zoo,* C.W.J. Beenakker, Science **353**, 539–540 (2016).
349. *Two-dimensional Josephson vortex lattice and anomalously slow decay of the Fraunhofer oscillations in a ballistic SNS junction with a warped Fermi surface,* V.P. Ostroukh, B. Baxevanis, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **94**, 094514 (2016).
350. *Wiedemann-Franz-type relation between shot noise and thermal conduction of Majorana surface states in a three-dimensional topological superconductor,* N.V. Gnezdilov, M. Diez, M.J. Pacholski, and C.W.J. Beenakker, Physical Review B **94**, 115415 (2016).
351. *Weyl-Majorana solenoid,* P. Baireuther, J. Tworzydło, M. Breitkreiz, I. Adagideli, and C.W.J. Beenakker, New Journal of Physics **19**, 025006 (2017).
352. *Superconductivity provides access to the chiral magnetic effect of an unpaired Weyl cone,* T.E. O'Brien, C.W.J. Beenakker, and I. Adagideli, Physical Review Letters **118**, 207701 (2017).
353. *Chirality blockade of Andreev reflection in a magnetic Weyl semimetal,* N. Bovenzi, M. Breitkreiz, P. Baireuther, T.E. O'Brien, J. Tworzydło, I. Adagideli, and C.W.J. Beenakker, Physical Review B **96**, 035437 (2017).
354. *Machine-learning-assisted correction of correlated qubit errors in a topological code,* P. Baireuther, T.E. O'Brien, B. Tarasinski, and C.W.J. Beenakker, Quantum **2**, 48 (2018).
355. *Twisted Fermi surface of a thin-film Weyl semimetal,* N. Bovenzi, M. Breitkreiz, T.E. O'Brien, J. Tworzydło, and C.W.J. Beenakker, New Journal of Physics **20**, 023023 (2018).
356. *Valley-momentum locking in a graphene superlattice with Y-shaped Kekulé bond texture,* O.V. Gamayun, V.P. Ostroukh, N.V. Gnezdilov, I. Adagideli, and C.W.J. Beenakker, New Journal of Physics **20**, 023016 (2018).
357. *Topologically protected Landau level in the vortex lattice of a Weyl superconductor,* M.J. Pacholski, C.W.J. Beenakker, and I. Adagideli, Physical Review Letters **121**, 037701 (2018).
358. *Adaptive weight estimator for quantum error correction in a time-dependent environment,* S.T. Spitz, B. Tarasinski, C.W.J. Beenakker, and T.E. O'Brien, Advanced Quantum Technologies 1800012 (2018).
359. *Neural network decoder for topological color codes with circuit level noise,* P. Baireuther, M.D. Caio, B. Criger, C.W.J. Beenakker, and T.E. O'Brien, New Journal of Physics **21**, 013003 (2019).
360. *Valley switch in a graphene superlattice due to pseudo-Andreev reflection,* C.W.J. Beenakker, N.V. Gnezdilov, E. Dresselhaus, V.P. Ostroukh, Y. Herasymenko, I. Adagideli, and J. Tworzydło, Physical Review B **97**, 241403(R) (2018).
361. *Low-high voltage duality in tunneling spectroscopy of the Sachdev-Ye-Kitaev model,* N.V. Gnezdilov, J.A. Hutasoit, and C.W.J. Beenakker, Physical Review B **98**, 081413(R) (2018).
362. *Deterministic creation and braiding of chiral edge vortices,* C.W.J. Beenakker, P. Baireuther, Y. Herasymenko, I. Adagideli, Lin Wang, and A.R. Akhmerov, Physical Review Letters **122**, 146803 (2019).
363. *Electrical detection of the Majorana fusion rule for chiral edge vortices in a topological superconductor,* C.W.J. Beenakker, A. Grabsch, and Y. Herasymenko, SciPost Physics **6**, 022 (2019).
364. *Pfaffian formula for fermion parity fluctuations in a superconductor and application to Majorana fusion detection,* A Grabsch, Y. Cheipesh, and C.W.J. Beenakker, Annalen der Physik **531**, 1900129 (2019).
365. *Effect of charge renormalization on the electric and thermoelectric transport along the vortex lattice of a Weyl superconductor,* G. Lemut, M.J. Pacholski, I. Adagideli, and C.W.J. Beenakker, Physical Review B **100**, 035417 (2019).
366. *Time-resolved electrical detection of chiral edge vortex braiding,* I. Adagideli, F. Hassler, A. Grabsch, M. Pacholski, and C.W.J. Beenakker, SciPost Physics **8**, 013 (2020).
367. *Search for non-Abelian Majorana braiding statistics in superconductors,* C.W.J. Beenakker, Scipost Physics Lecture Notes 15 (2020).
368. *Dynamical signatures of ground-state degeneracy to discriminate against Andreev levels in a Majorana fusion experiment,* A Grabsch, Y. Cheipesh, and C.W.J. Beenakker, Advanced Quantum Technologies **3**, 1900110 (2020).
369. *Universal chiral magnetic effect in the vortex lattice of a Weyl superconductor,* M.J. Pacholski, C.W.J. Beenakker, and I. Adagideli, Annals of Physics **417**, 168103 (2020).
370. *Localization landscape for Dirac fermions,* G. Lemut, M.J. Pacholski, O. Ovdat, A. Grabsch, J. Tworzydlo, and C.W.J. Beenakker, Physical Review B **101**, 081405(R) (2020).
371. *Magnetic breakdown spectrum of a Kramers-Weyl semimetal,* G. Lemut, A. Donís Vela, M.J. Pacholski, J. Tworzydło, and

C.W.J. Beenakker, New Journal of Physics **22**, 093022 (2020).

372. *Half-integer charge injection by a Josephson junction without excess noise,* F. Hassler, A. Grabsch, M.J. Pacholski, D.O. Oriekhov, O. Ovdat, I. Adagideli, and C.W.J. Beenakker, Physical Review B **102**, 045431 (2020).
373. *Shot noise distinguishes Majorana fermions from vortices injected in the edge mode of a chiral p-wave superconductor,* C.W.J. Beenakker and D.O. Oriekhov, SciPost Physics **9**, 080 (2020).
374. *Deconfinement of Majorana vortex modes produces a superconducting Landau level,* M.J. Pacholski, G. Lemut, O. Ovdat, I. Adagideli, and C.W.J. Beenakker, Physical Review Letters **126**, 226801 (2021).
375. *Voltage staircase in a current-biased quantum-dot Josephson junction,* D.O. Oriekhov, Y. Cheipesh, and C.W.J. Beenakker, Physical Review B **103**, 094518 (2021).
376. *Generalized eigenproblem without fermion doubling for Dirac fermions on a lattice,* M.J. Pacholski, G. Lemut, J. Tworzydło, and C.W.J. Beenakker, SciPost Physics **11**, 105 (2021).
377. *Chirality inversion of Majorana edge modes in a Fu-Kane heterostructure,* A. Donís Vela, G. Lemut, M.J. Pacholski, and C.W.J. Beenakker, New Journal of Physics **23**, 103006 (2021).
378. *Chiral charge transfer along magnetic field lines in a Weyl superconductor,* G. Lemut, M.J. Pacholski, and C.W.J. Beenakker, Physical Review B **104**, 125444 (2021).
379. *Supercell symmetry modified spectral statistics of Kramers-Weyl fermions,* G. Lemut, M.J. Pacholski, J. Tworzydło, and C.W.J. Beenakker, Journal of Physics A **55**, 234003 (2022).
380. *Massless Dirac fermions on a space-time lattice with a topologically protected Dirac cone,* A. Donís Vela, M.J. Pacholski, G. Lemut, J. Tworzydło, and C.W.J. Beenakker, Annalen der Physik **534**, 2200206 (2022).
381. *Reflectionless Klein tunneling of Dirac fermions: comparison of split-operator and staggered-lattice discretization of the Dirac equation,* A. Donís Vela, G. Lemut, M.J. Pacholski, J. Tworzydło, and C.W.J. Beenakker, Journal of Physics Condensed Matter **34**, 364003 (2022).
382. *Bloch oscillations in the magnetoconductance of twisted bilayer graphene,* T. Vakhtel, D.O. Oriekhov, and C.W.J. Beenakker, Physical Review B **105**, L241408 (2022).
383. *Breathing mode in open-orbit magnetotransport: a magnetic lens with a quantum mechanical focal length,* D.O. Oriekhov, T.T. Osterhold, T. Vakhtel, A.R. Akhmerov, and C.W.J. Beenakker, Physical Review B **106**, 235413 (2022).
384. *Method to preserve the chiral-symmetry protection of the zeroth Landau level on a two-dimensional lattice,* A. Donís Vela, G. Lemut, J. Tworzydło, and C.W.J. Beenakker, Annals of Physics **456**, 169208 (2023).
385. *Pair correlation function of the one-dimensional Riesz gas,* C.W.J. Beenakker, Physical Review Research **5**, 013152 (2023).
386. *Tangent fermions: Dirac or Majorana fermions on a lattice without fermion doubling,* C.W.J. Beenakker, A. Donís Vela, G. Lemut, M.J. Pacholski, and J. Tworzydło, Annalen der Physik **535**, 2300081 (2023).
387. *Magnus effect on a Majorana zero-mode,* G. Lemut, M.J. Pacholski, S. Plugge, C.W.J. Beenakker, and I. Adagideli, Physical Review B **107**, 205420 (2023).
388. *Phase-shifted Andreev levels in an altermagnet Josephson junction,* C.W.J. Beenakker and T. Vakhtel, Physical Review B **108**, 075425 (2023).
389. *Dynamical simulation of the injection of vortices into a Majorana edge mode,* I.M. Flór, A. Donís Vela, C.W.J. Beenakker, and G. Lemut, Physical Review B **108**, 235309 (2023).
390. *Casimir-Josephson force on a point contact between two superconductors,* C.W.J. Beenakker, Physical Review B **108**, 195422 (2023).
391. *Helical Luttinger liquid on a space-time lattice,* V.A.Zakaharov, J. Tworzydło, C.W.J. Beenakker, and M.J. Pacholski, Physical Review Letters **133**, 116501 (2024).
392. *Topologically protected Casimir effect for lattice fermions,* C.W.J. Beenakker, Physical Review Research **6**, 023058 (2024).
393. *Repulsive Casimir force from a Majorana zero-mode,* C.W.J. Beenakker, APL Quantum **1**, 026105 (2024).
394. *Josephson effect in a junction coupled to an electron reservoir,* C.W.J. Beenakker, Applied Physics Letters **125**, 122601 (2024).
395. *Luttinger liquid tensor network: Sine versus tangent dispersion of massless Dirac fermions,* V.A. Zakharov, S. Polla, A. Donís Vela, P. Emonts, M.J. Pacholski, J. Tworzydło, and C.W.J. Beenakker, Physical Review Research **6**, 043059 (2024).
396. *Chiral edge mode for single-cone Dirac fermions,* C.W.J. Beenakker, Physical Review B **110**, 165421 (2024).
397. *Poor man's Majorana edge mode enabled by specular Andreev reflection,* C.W.J. Beenakker, Physical Review B **110**, L180402 (2024).
398. *Majorana-metal transition in a disordered superconductor: Percolation in a landscape of topological domain walls,* V.A. Zakharov, I.C. Fulga, G. Lemut, J. Tworzydło, and C.W.J. Beenakker, New Journal of Physics **27**, 033002 (2025).
399. *Single-cone Dirac edge states on a lattice,* A. Donís Vela and C.W.J. Beenakker, Journal of Physics A **58**, 105302 (2025).
400. *Entropy and singular-value moments of products of truncated random unitary matrices,* C.W.J. Beenakker, Physical Review E **111**, 064108 (2025).
401. *Monitored quantum transport: full counting statistics of a quantum Hall interferometer,* C.W.J. Beenakker and Jin-Fu Chen, Quantum **9**, 1874 (2025).
402. *Something about the Mechanism of Induction Phenomena: The forgotten work of Berta de Haas-Lorentz on diamagnetism in superconductors,* G. Venditti, C.W.J. Beenakker, and L. Rademaker, Physica C **635**, 1354762 (2025).
403. *Boundary-condition-assisted chiral-symmetry protection of the zeroth Landau level on a two-dimensional lattice,* A. Donís Vela and C.W.J. Beenakker, Journal of Physics A **58**, 305301 (2025).

404. *Shot noise from which-path detection in a chiral Majorana interferometer,* C.W.J. Beenakker, Physical Review B **112**, L081402 (2025).
405. *Bimodal distribution of delay times and splitting of the zero-bias conductance peak in a double-barrier normal-superconductor junction,* C.W.J. Beenakker and V.A. Zakharov, Physical Review B **112**, 115340 (2025).
406. *Pure dephasing increases partition noise in the quantum Hall effect,* C.W.J. Beenakker, Physical Review B **113**, 075416 (2026).
407. *Lattice fermion simulation of spontaneous time-reversal symmetry breaking in a helical Luttinger liquid,* V.A. Zakharov, J. Sánchez Fernán, and C.W.J. Beenakker, Annalen der Physik **538**, e00004 (2026).
408. *Monitored quantum transport through a disordered one-dimensional conductor*, J. Sánchez Fernán, J. Tworzydło, and C.W.J. Beenakker, submitted to Physical Review B.
409. *Monitored chaotic scattering,* C.W.J. Beenakker, J. Sánchez Fernán, and J. Tworzydło, Journal of Mathematical Physics **67**, 091901 (2026).
410. *Quantum circuit decomposition of the tangent-fermion Dirac operator*, C.W.J. Beenakker, submitted to Journal of Physics A.
411. *Symmetric mass generation of interacting chiral fermions on a one-dimensional lattice without fermion doubling,* V.A. Zakharov, A. Ueda, F. Verstraete, and C.W.J. Beenakker, Physical Review Research **8**, 043009 (2026).
412. *Fragile single-cone Dirac quantum walks in two dimensions*, C.W.J. Beenakker, J. Sánchez Fernán, and J. Tworzydło, submitted to Physical Review A.
413. *Tangent fermions can restore vacuum stability of discrete-time Dirac models*, C.W.J. Beenakker, submitted to Quantum.
414. *Phonon Scharnhorst effect: Acoustic analogue of the vacuum-fluctuation-boosted speed of light*, C.W.J. Beenakker, submitted to Physical Review Letters.