

CURRICULUM VITAE

DATE

October 30, 2013

PERSONAL DETAILS

Name: Professor Ulf Leonhardt
Address: Department of Physics of Complex Systems
Weizmann Institute of Science
Rehovot 76100, Israel
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Phone: +972 934 6337
Mobile: +972 54 2234757
Date of birth: October 9, 1965
Nationality: Germany, UK

EMPLOYMENT

2012- **Weizmann Institute of Science**, Israel
Professor of Physics
2012-2017 **South China Normal University**, China
Visiting Distinguished Professor
2011 **University of Vienna** and **Austrian Academy of Sciences**
Visiting Professor
2008 **National University of Singapore**
Visiting Professor
2000-2012 **University of St Andrews**, UK
Chair in Theoretical Physics
1998-2000 **Royal Institute of Technology (KTH)**, Sweden
Göran-Gustafsson and Feodor-Lynen Fellow
22/04 1998 Habilitation in Theoretical Physics
Title of the thesis: *State reconstruction in quantum mechanics*
1996-1998 **University of Ulm**, Germany
Habilitation fellow of the German Research Council
(Deutsche Forschungsgemeinschaft)
1995-1996 **Oregon Center for Optics**, University of Oregon,
Eugene, USA
Otto Hahn Fellow and Research Scholar
1994-1995 **Max Planck Research Group Nonclassical Radiation**
Postdoctoral fellow of the Max Planck Society

EDUCATION

17/12 1993	PhD in Physics (Dr. rer. nat.) from Humboldt University Grade: Summa Cum Laude Title of the thesis: <i>Quantum theory of simple optical instruments</i>
Summer 1993	Imperial College London, UK Visiting doctoral student
1992–1993	Max Planck Research Group Nonclassical Radiation at Humboldt University Berlin Doctoral student
May 1990	Diploma in Physics (Dipl. Phys.) from Jena University Grade: Distinction Title of the thesis: <i>Quantum optics of oscillator media</i>
1987–1988	Moscow State University, Russia Exchange student, studies in quantum–field theory
1984–1990	Friedrich Schiller University Jena, Germany University student, regular university study of physics

AWARDS AND FELLOWSHIPS

2012	Thousand Talents Award of China
2009	Theo Murphy Blue Skies Award of the Royal Society Research fellowship. 6 fellowships were awarded in all areas of science.
2009	Fellow of the Royal Society of Edinburgh.
2008	Outstanding Referee for the journals of the American Physical Society.
2008	Royal Society Wolfson Research Merit Award Awarded for the theory of invisibility and quantum forces and for laboratory demonstrations of artificial black holes.
2006	Scientific American 50 Award For my work on the theory of cloaking devices I was listed among the world’s 50 top policy, business and research leaders 2006.
2002	Leverhulme Research Fellowship Awarded for work on artificial black holes.
2002	Fellow of the Institute of Physics.
1994	Otto Hahn Award of the Max Planck Society The prize was given for my work on the theory of modern quantum–optical measurement technology. I was the first of former East–Germany to receive the Otto Hahn Award.
1994	Joachim Tiburtius Award of the Berlin Senate The prize was given for the best Doctoral Thesis of all academic disciplines of the three Berlin Universities.

EXTENDED VISITS

2005	King Saud University, Riyadh, Saudi Arabia
2002	Institute of Theoretical Physics, Santa Barbara, USA
2000	University of Jena, Germany
1999	University of St Andrews, Scotland
	University of Nürnberg–Erlangen, Germany
1998–1999	Los Alamos National Laboratory, USA
1997	Technical University Prague, Czech Republic
	University of Bristol, England
	University “La Sapienza”, Rome, Italy
1996	University of Arizona, USA
	University of New Mexico, USA
1995	University of Innsbruck, Austria
	University of Constance, Germany
1994	University of Helsinki, Finland
	Landau Institute for Theoretical Physics, Russia
	University of Queensland, Australia
	Australian National University

GRANTS AND FELLOWSHIPS

2012–2017	Principal Investigator of the ERC Advanced Grant <i>Transformation Optics: cloaking, perfect imaging and horizons</i> Euro 2,495,399
2012–2015	Joint Principal Investigator of the EPSRC responsive-mode grant <i>Hawking Radiation in Dielectric Horizon Analogues</i> Heriot Watt University and St Andrews, GBP 1,179,600
2011–2016	EPSRC Programme Grant <i>The Quest for</i> <i>Ultimate Electromagnetics using Spatial Transformations</i> with Queen Mary London, Exeter and Oxford, GBP 4,582,000
2009–2011	Theo Murphy Blue Skies Award of the Royal Society, GBP 106,000
2008–2013	Royal Society Wolfson Research Merit Award, GBP 100,000
2006–2009	Principal Investigator of the EPSRC responsive-mode grant <i>Fibre-optical analogue of the event horizon</i> , GBP 670,499
2005–2010	Co-investigator of the EPSRC grant <i>Multidisciplinary Critical</i> <i>Mass in Computational Algebra and Applications</i> , GBP 1,098,897
2004–2007	Principal Investigator of the Leverhulme research grant <i>Geometry of optical media: ideas and applications</i> , GBP 167,021
2003–2005	Principal Investigator of the EPSRC responsive-mode grant <i>Theory of Sonic black holes in Bose-Einstein condensates</i> , GBP 95,195
2002–2004	Marie Curie Fellowship for Dr Stefano Giovanazzi, Euro 107,072
2002–2004	Leverhulme Fellowship, GBP 7,510
2000–2002	EPSRC starter grant, GBP 62,663

2000–2002	Marie Curie Fellowship for Dr Tamas Kiss, Euro 107,372
1998–2000	Fellowship of the Göran Gustafsson Foundation, Sweden
1998–2000	Feodor–Lynen Fellowship of the Alexander von Humboldt Foundation, Germany
1997–1999	Project within the research consortium <i>Quantum Gases</i> of the German Research Council.
1996–1998	Habilitation fellowship of the German Research Council
1993	Grant of the German Academic Exchange Service to visit Imperial College, London

INVITED CONFERENCE PAPERS

(2013) (117) CLEO, San Jose, USA, (116) Quantum Optics VIII, Warsaw, Poland, (115) CLEO-Europe, Munich, Germany (114) Inverse Problems and Applications, Mittag-Leffler Institute, Stockholm, Sweden, (113) FRISNO, Ein Gedi, Israel, (112) OASIS, Tel-Aviv, Israel, (2012) (111) Dwek School on Nanoplasmonics, Weizmann Institute, Israel (110) SPIE Optical Systems Design, Barcelona, Spain (109) International Workshop on Metamaterials, Nanjing, China, (108) Croucher ASI “New Materials and New Concepts for Controlling Light and Waves”, Hong Kong, (107) CoQuS Summer School 2012 “Quantum Physics meets Gravity”, Vienna, Austria, (106) Workshop on Effective Gravity in Fluids and Superfluids, Trieste, Italy, (105) Inverse Problems, Irvine, USA, (104) CIMTEC 2012, Montecatini Terme, Italy, (103) CNRS meeting on cloaking, Paris, France, (102) 500th Heraeus Seminar “Highlights of Quantum Optics”, Bad Honnef, Germany, (2011) (101) Nonlinear optics and complexity in photonic crystal fibres and nanostructures, Erice, Italy (100) Metamaterials 2011, Barcelona, Spain, (99) Inverse Problems in Analysis and Geometry, Cambridge, UK, (98) ICMAT Singapore, (97) New trends in the physics of the quantum vacuum: from condensed matter to gravitation and cosmology, Trento, Italy, (96) Graduate school on analogue gravity, Como, Italy, (95) Metamaterials Workshop, Hangzhou, China, (94) SU2P Annual Meeting, St Andrews, UK, (93) 17th Annual Conference on Optics and Photonics, Mahan, Iran, (2010) (92) SFB Meeting, Vienna, Austria, (91) Grand Challenges in Photonics, European Optical Society, France, (90) International Workshop on Multiscale Modeling, Simulation and Optimization, Erlangen, Germany, (89) Metamaterials-2010, Karlsruhe, Germany, (88) Photon 2010, Southampton, UK, (87) Third Mexican Meeting on Mathematical and Experimental Physics, Mexico City, (86) CIMTEC 2010, Florence, Italy, (85) 2nd Nice Colloquium on Analogue Gravity, Nice, France, (84) SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, USA, (83) Optical Waveguide Theory and Numerical Modelling, Cambridge, UK (82) Global COE in Photonics, Kyoto, Japan (2009) (81) ABB 50/25, Bristol, UK, (80) Printed Electronics, San Jose, USA, (79) AB 50, Tel Aviv, Israel, (78) Metamaterials-2009, London, UK, (77) Emergent Gravity IV, Vancouver, Canada, (76) Marcel-Grossmann Meeting, Paris, France, (75) CLEO/IQEC, Baltimore, USA, (74) East West Summit on Metamaterials, Singapore and Taiwan, (73) Nordic Exceptional Trendshop No. 6, Aarhus, Denmark, (72) Towards the Observation of Hawking Radiation in Condensed Mat-

ter Systems, Valencia, Spain, (71) LEOS Winter Topicals, Innsbruck, Austria, (70) NANOMETA-2009, Seefeld, Austria, (2008) (69) Metamaterials and Their Applications, Hyderabad, India, (68) Electromagnetic Metamaterials and their Approximations, CSIC, University of Maryland, USA, (67) 2nd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Pamplona, Spain, (66) From Quantum to Cosmos III: Fundamental Physics Research in Space, Airlie Center near Washington, DC, USA, (65) IEEE International Symposium, San Diego, USA, (64) Rank Prize Meeting, Lake District, UK, (63) LPHYS'08, Trondheim, Norway, (62) SPIE Europe, Strasbourg, France, (61) International Conference on Computational and Experimental Engineering and Sciences, Honolulu, USA, (60) Low Temperatures 2008, Helsinki, Finland, (59) PIERS, Hangzhou, China, (58) Royal Society Discussion Meeting Cosmology Meets Condensed Matter, (2007) (57) Metamaterials 2007, Rome, Italy (56) Cosm'innov, Orleans, France, (55) 14th International Summer School on Nano Optics and Photonics, Miraflores de la Sierra, Spain, (54) Photonic Crystals and Metamaterials, Reading, UK, (53) Coherence and Quantum Optics, Rochester, USA, (52) Spring Meeting of European Material Research Society, Strasbourg, France, (51) SPIE Europe, Prague, Czech Republic, (50) Squeezed States and Uncertainty Relations, Bradford, UK, (49) NANOMETA-2007, Seefeld, Austria, (2006) (48) Anniversary Symposium of the Low Temperature Laboratory, Helsinki, Finland, (47) Fitzpatrick Center, Duke University, USA, (46) Cosmology in the Laboratory, Leiden, the Netherlands, (45) Coherent Control of the Fundamental Processes in Optics and X-Ray Optics, boat on Volga river, Russia, (44) From Quantum to Cosmos: Fundamental Physics Research in Space, Airlie Center near Washington, DC, USA (43) SPIE Photonics West, San Jose, USA, (2005) (42) Low dimensional systems in Quantum Optics, Cuernavaca, Mexico, (41) Ultracold Matter: modelling and simulation workshop, Cumberland Lodge, Windsor, UK, (40) Quantum Simulations via Analogues, Dresden, Germany, (39) Fitzpatrick Center, Duke University, USA, (38) Squeezed States and Uncertainty Relations, Besancon, France, (2004) (37) Heraeus Summer School New Frontiers in Quantum Theory and Measurement, Reims, Germany, (36) Fitzpatrick Center, Duke University, USA, (2003) (35) QuAMP, Milton Keynes, UK, (34) Cosmology in the Laboratory, Bilbao, Spain, (33) NATO workshop Singular Optics, Kiev, Ukraine, (2002) (32) UK Cold-atom network, Durham, England, (31) Miniprogramme on Quantum Optics, KITP, Santa Barbara, (30) IQEC 2002 in Moscow, Russia, (29) Central-European Workshop on Quantum Optics in Szeged, Hungary, (28) Joint meeting of the European Physical Society Condensed Matter Division (CMD-19) together with the Condensed Matter and Material Physics (CMMP) meeting of the Institute of Physics in Brighton, UK, (27) Dynamics and Thermodynamics of Systems with Long Range Interactions in Les Houches, France, (2001) (26) Cosmology in the Laboratory in London, England, (25) Central-European Workshop on Quantum Optics in Prag, Czech Republic (24) Qrandom in Eindhoven, the Netherlands, (23) Plenary talk at Ultra Low Energy Physics: Methods and Phenomenology near Helsinki, Finland, (22) Winter Colloquium on The Physics of Quantum Electronics in Snowbird, USA, (2000) (21) Plenary talk at Analog Models for General Relativity in Rio de Janeiro, Brazil, (20) Mysteries, Puzzles and Paradoxes in Quantum Mechanics in Gargnano, Italy, (19) Topological Defects in Particle Physics, Cosmology

and Condensed Matter at Capri, Italy, (18) Workshop on Quantum Transport at Reimensburg near Ulm, Germany, (17) Nordic Optics Days in Uppsala, Sweden, (16) Central–European Workshop on Quantum Optics in Balatonfüred, Hungary, (15) Spring Meeting of the Deutsche Physikalische Gesellschaft in Bonn, Germany, (14) Spring Meeting of the Svenska fysikersamfundet, sektionen för gravitation, Stockholm, Sweden (1999) (13) General Conference of the European Physical Society, London, England (12) Spring Meeting of the Deutsche Physikalische Gesellschaft in Heidelberg, Germany, (1998) (11) Workshop on Quantum Gases, Lake Constance, Germany, (1997) (10) European Research Conference on Bose–Einstein Condensation in Castelveccchio Pascoli, Italy, (9) Plenary Talk at the 5th Conference Squeezed States and Uncertainty Relations in Balatonfüred, Hungary, (8) Conference “Pursuing Quantum Mechanics to the Limits” of the Collegium Budapest (7) Central–European Workshop on Quantum Optics in Prag, Czech Republic, (6) Spring Meeting of the Deutsche Physikalische Gesellschaft in Mainz, Germany, (1996) (5) Workshop in honor of Professor Harry Paul in Berlin, Germany (4) Central–European Workshop on Quantum Optics in Budmerice, Slovak Republic, (1995) (3) Plenary Talk at the European Research Conference on Quantum Optics in Davos, Switzerland, (2) Spring Meeting of the Deutsche Physikalische Gesellschaft in Innsbruck, Germany, (1994) (1) Symposium on Quantum Optics in Ulm, Germany.

INVITED SEMINARS AND COLLOQUIA

(2013) Weizmann Institute, Holon Institute of Technology, Bar-Ilan University, Tel-Aviv University, (2012) Technion, South China Normal University, RIKEN, University of Tokyo, Weizmann Institute, Heriot-Watt University, (2011) Technion, Weizmann Institute, University of Trento, University of Vienna, Carl Zeiss Jena, IST Austria, Kuang-Chi Institute of Advanced Technology, Suzhou University, Lancaster University, Shahid Beheshti University, Sharif University, University of Esfahan, University College London, (2010) University of Leeds, Max Planck Institute of Quantum Optics, King Abdullah University of Science and Technology, Cornell University, Queen Mary College London, Stanford University, Osaka University, University of Nottingham, (2009) Royal Institute of Technology Stockholm, Royal Society staff meeting, University of California at Berkeley, Queen Mary College London, Oxford University, Weizmann Institute, Masaryk University, Cornell University, University of Jena, Weierstrass Institute, Berlin, Colloquium Ehrenfestii Leiden, University of Birmingham, (2008) Humboldt University Berlin, Hong Kong University of Science and Technology, University of Tokyo (second time), University of Hannover, Max-Planck Research Group of Optics, Information and Photonics, Physical Review Letters Editorial Office, University of Tokyo, Future University Hakodate, University of Tübingen, (2007) University of Umea, Ludwig Maximilian University Munich, ETH Zurich, Royal Holloway London, University of Exeter, National University of Singapore, Ecole Normale Supérieure, Imperial College London, University of Stuttgart, University of Karlsruhe, University of Innsbruck, (2006) Oxford University, University of Southampton, University of Nice, Max-Planck Research Group of Optics, Information and Photonics, Max-Planck Institute of Quantum Optics, Helsinki Institute of Technology, Imperial College London,

(2005) University of Heidelberg, Universidad Nacional Autonoma de Mexico, King Saud University (2 colloquia, 1 seminar), (2004) University of Jena, Hahn-Meitner Institute Berlin, University of Glasgow, Los Alamos National Laboratory, University of Erlangen, University of Durham, (2003) University of Sussex, University of Ulm, Max Planck Institute of Quantum Optics, University of Birmingham, (2002) Heriot-Watt University, Harvard University, University of Bristol, University of Sussex, (2001) University of Strathclyde, Max-Planck Institute for Physics of Complex Systems in Dresden, University of Jena, University of Stuttgart, University of Hannover, Queen Mary and Westfield College, (2000) University of York, University of Jena, Technical University of Helsinki, University of Stockholm, Max Planck Institute of Quantum Optics, Royal Institute of Technology, (1999) University of Stockholm, University of St Andrews, University of Erlangen, Los Alamos National Laboratory, (1998) University of Harfortshire, (1997) University of Bristol, University of Cologne, University “La Sapienza” in Rome, Center for Advanced Studies in Budapest, University of Innsbruck, (1996) University of Jena, University of Hannover, University of Constance, University of Oregon, University of New Mexico, University of Arizona, (1995) University of Innsbruck, Summer school “Quantum Fluctuations” in Les Houches, University of Oregon, University of Constance, (1994) Johann Wolfgang Goethe University Frankfurt, Research Center of German Telecom in Darmstadt, Ludwig Maximilian University Munich, University of Helsinki, Landau Institute for Theoretical Physics, University of Queensland, Australian National University, (1993) University of Constance, Imperial College London, (1992) University of Jena, Max Planck Research Group Nonclassical Radiation in Berlin, University of Rostock, (1991) Moscow State University, Max Planck Institute of Quantum Optics, (1990) Humboldt University Berlin, (1989) Friedrich Schiller University Jena.

PUBLIC LECTURES AND OUTREACH

5-10 July 2011, Royal Society Summer Science Exhibition, London
 11 September 2008, BA Festival Of Science, Liverpool
 5 September 2001, BA Festival Of Science, Glasgow
 19 January 2001, London, Royal Institution Lecture on Artificial Black Holes
 14 November 2000, St Andrews, St Leonard’s College Lecture

MEDIA ATTENTION

Our fibre-optical analogue of the event horizon has been featured by Science, Nature, Scientific American, IEEE Spectrum, Physics World, New Scientist, Discover, Science News, BBC News, Fox News, CBC Radio, BBC Radio Scotland, The Daily Telegraph and Sonntagszeitung.

Thomas Philbin’s and my work on quantum levitation has been mentioned in Nature as one of the research highlights; it was featured by the BBC, Physics World, Physics Today, New Scientist, The Daily Telegraph, The Independent and Der Spiegel.

My idea for designing invisibility devices has been featured by CNN, BBC, Discovery and in Science, Nature, Discover, New Scientist and many international newspapers, including Frankfurter Allgemeine Zeitung, The Guardian, Sunday Times, The Daily Telegraph, The Boston Globe, China View, The Times of India and many more (I lost count).

My ideas to make artificial black holes has been featured in The New York Times, Dagens Nyheter, Die Zeit, New Scientist, Science & Vie, Frankfurter Allgemeine Zeitung, Discover, Sunday Times, BBC Radio Scotland, Scientific American, Nature, NOW-TV, EPSRC Newsletter, BBC Radio 4, The Economist, The Daily Telegraph, Physics World, Folha de S. Paulo, Gazeta Wyborcza, and in a number of news bulletins on the Internet.

RESEARCH SUPERVISION

At the University of St Andrews I was heading a group of three research fellows, Dr Thomas Philbin, Dr Simon Horsley, Dr Susanne Kehr, and two PhD students, Sahar Sahebdivani, William Simpson. I was closely collaborating with the lecturer Dr Friedrich König in the joint supervision of the PhD student Joanna McLenaghan. I supervised the PhD research of Dr Conor Farrell and Dr Scott Robertson, and my former postdocs Dr Tomas Tyc, Dr Julian Henn, Dr Stefano Giovanazzi, Dr Ilya Vadeiko, Dr Tamas Kiss and Dr Patrik Öhberg. I supervised partially the doctoral research of Jaromir Fiurásek. I have been supervising 10 master's projects so far. My project student Janos Perzcel received the Principal's Medal at St Andrews.

At the Royal Institute of Technology I had been supervising the doctoral research of Paul Piwnicki.

At the University of Ulm I assisted Professor Wolfgang Schleich in the supervision of the doctoral research of Dr Daniel Krähmer and Dr Patrick Bardroff.

At the Max Planck Research Group Nonclassical Radiation in Berlin I assisted Professor Harry Paul in the supervision of the doctoral research of Dr Jana Lehner, Dr Bernhard Böhmer, and Dr Tamas Kiss. Dr Lehner received the Otto Hahn Award of the Max Planck Society and the Carl Ramsauer Award of Siemens/Daimler-Benz for her thesis.

EDITORIAL AND REFEREEING RESPONSIBILITIES

Each year I write about 100 referee reports for the journals: (1) Acta Physica Polonica, (2) American Journal of Physics, (3) Applied Optics, (4) Applied Physics Letters, (5) British Journal for the Philosophy of Science, (6) Chinese Optics Letters, (7) Chinese Physics Letters, (8) European Physics Journal D, (9) Europhysics Letters, (10) Fortschritte der Physik, (11) IEEE Antennas and Propagation Magazine, (12) IEEE Antennas and Wireless Propagation Letters, (13) International Journal of Antennas and Propagation, (14) Inverse Problems, (15) JETP Letters (16) Jour-

nal of Applied Physics B, (17) Journal of Geometry and Physics, (18) Journal of Mathematical Physics, (19) Journal of Modern Optics, (20) Journal of Optics, (21) Journal of the Optical Society of America A, (22) Journal of the Optical Society of America B, (23) Journal of Physics A, (24) Journal of Physics B, (25) Journal of Vacuum Science and Technology, (26) Nature, (27) Nature Materials, (28) Nature Photonics, (29) Nature Physics, (30) New Journal of Physics, (31) Nuovo Cimento B, (32) Optical and Quantum Electronics, (33) Optics Communications, (34) Optics Express, (35) Optics Letters, (36) Photonics and Nanostructures, (37) Physica D, (38) Physica Scripta, (39) Physical Review A, (40) Physical Review B, (41) Physical Review D, (42) Physical Review E, (43) Physical Review Letters, (44) Physics Letters A, (45) Reviews of Modern Physics, (46) Science, (47) Scientific Reports, (48) Zeitschrift für Naturforschung.

I am a member of the Editorial Board of New Journal of Physics.

I was the guest editor of the focus issues on *cloaking and transformation optics* and *classical and quantum analogues for gravitational phenomena and related effects* of New Journal of Physics.

I was a member of the Editorial Board of the Physical Review A and of the Journal of the European Optical Society B (Quantum and Semiclassical Optics).

TEACHING EXPERIENCE

Spring 2012	Honours Course on <i>Advanced Quantum Mechanics</i> Junior Honours Course on <i>Classical Mechanics</i>
Winter 2011	Graduate Course on <i>The Physics of the Quantum Vacuum</i> (IQOQI Vienna)
Spring 2009	Senior Honours Course on <i>Quantum Optics</i> Honours Course on <i>Quantum Mechanics III</i> Junior Honours Course on <i>Classical Mechanics</i>
Autumn 2008	Freshman seminars at National University of Singapore
Spring 2008	Same as spring 2007
Spring 2007	Senior Honours Course on <i>Quantum Optics</i> Honours Course on <i>Classical Mechanics</i>
Spring 2006	Honours Course on <i>Classical Mechanics</i>
Winter 2005	Honours Course on <i>Special Relativity and Fields</i>
Spring 2005	Honours Course on <i>Classical Mechanics</i>
Winter 2004	Honours Course on <i>Special Relativity and Fields</i>
Winter 2003	Honours Course on <i>Special Relativity and Fields</i>
Spring 2003	Senior Honours Course on <i>Quantum Optics</i>
Winter 2002	Junior Honours course on <i>Quantum Mechanics I</i>
Spring 2002	<i>Concepts of Physics</i> Physics course for non-science students Senior Honours Course on <i>Quantum Optics</i>

Winter 2001	Junior Honours course on <i>Theoretical Mechanics</i>
Winter 2000	Senior Honors Course on <i>Quantum Optics</i>
Winter 1997/98	Advanced course on <i>Partial Differential Equations</i> illustrated by a number of physics examples from a wide range of disciplines. 2 hours a week (Ulm).
Summer 1997	Advanced course <i>Canonical Mechanics and Field Theory</i> . 2 hours a week (Ulm).
Winter 1996/97	Advanced course on <i>Partial Differential Equations</i> . 2 hours a week (Ulm).
Summer 1996	Problem classes in <i>Atomic Physics and Quantum Mechanics</i> . 2 hours a week (Ulm).

SHORT-TERM TEACHING

- August 2000: 10-hour course at the Summer School on Quantum Optics 2000 at the Helsinki Institute of Technology.
- May–June 1999: 20-hour graduate course “Measuring the quantum state of light”, Royal Institute of Technology in Stockholm.
- Autumn 1998: One double lecture within the quantum optics course at the Royal Institute of Technology in Stockholm.
- April 22, 1998: Open lecture on “Quantum Mechanics of Planetary Motion”, University of Ulm.
- November 26, 1997: Official teaching examination of Habilitation procedure, University of Ulm.
- November 1997: Four lectures on state reconstruction in quantum mechanics at Technical University of Prague.

SKILLS

I speak and write fluently German, English, Russian, and Swedish.

REFERENCES

Professor Sir Michael Berry, FRS
Melville Wills Professor of Physics
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Tyndall Avenue, Bristol BS8 1TL, UK
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Professor Sir Peter Knight, FRS
Kavli Royal Society International Centre
Chicheley Hall, Chicheley,
Newport Pagnell, MK16 9JJ, UK
Email: p.knight@imperial.ac.uk
Phone: +44 1234 868650

Professor Anton Zeilinger
Quantum Optics, Quantum Nanophysics, Quantum Information
University of Vienna
Boltzmanngasse 5
A-1090 Vienna, Austria
Email: zeilina6@univie.ac.at
Phone: +43 1 4277 5120

LIST OF PUBLICATIONS

BOOKS AND BOOK CONTRIBUTIONS

- 7 :** U. Leonhardt, *Transformation Optics*, in *Analogue Gravity Phenomenology* edited by Daniele Faccio et al. (Springer, Berlin, 2013).
- 6 :** U. Leonhardt and T. G. Philbin, *Geometry and Light: the Science of Invisibility*, 288 pages (Dover, Mineola, 2010).
- 5 :** U. Leonhardt, *Essential Quantum Optics: From Quantum Measurements to Black Holes*, 288 pages (Cambridge University Press, Cambridge, 2010).
- 4 :** U. Leonhardt and T. G. Philbin, *Cloaking and transformation media*, in *Metamaterials Handbook*, edited by Filippo Capolino (CRC Press, 2009).
- 3 :** U. Leonhardt and T. G. Philbin, *Black-hole lasers revisited*, in *Quantum Analogues: From Phase Transitions to Black Holes and Cosmology*, edited by William G. Unruh and Ralf Schutzhold (Springer, Berlin, 2007).
- 2 :** U. Leonhardt, *Slow light*, in *Artificial black holes*, edited by Mario Novello, Matt Visser and Grigori Volovik (World Scientific, Singapore, 2002).
- 1 :** U. Leonhardt, *Measuring the Quantum State of Light*, 194 pages, (Cambridge University Press, Cambridge, 1997).

REVIEWS AND VIEWS

- 14 :** U. Leonhardt, *Gravitational lens on a chip*, Nature Photonics **7**, 856 (2013).
- 13 :** U. Leonhardt, *Cloaking of Heat*, Nature **498**, 440-441 (2013).
- 12 :** U. Leonhardt, *To invisibility and beyond* (Invited Comment on Maxwell's legacy), Nature **471**, 292-293 (2011).
- 11 :** U. Leonhardt and N. Korolkova, *The 17th Central-European Workshop on Quantum Optics in St Andrews, Scotland*, Phys. Scr. T **143**, 014001 (2011).
- 10 :** U. Leonhardt, *Towards invisibility in the visible*, Nature Materials **8**, 537-538 (2009).
- 9 :** U. Leonhardt and T. G. Philbin, *Transformation Optics and the Geometry of Light*, Prog. Opt. **53**, 69-152 (2009).
- 8 :** U. Leonhardt and D. R. Smith, *Focus on Cloaking and Transformation Optics*, Editorial, New J. Phys. **10**, 115019 (2008).
- 7 :** U. Leonhardt, *Invisibility Cup*, Nature Photonics News and Views **1**, 207-208 (2007).

- 6 :** U. Leonhardt, *Momentum in Uncertain Light*, Nature News and Views **444**, 823-824 (2006).
- 5 :** U. Leonhardt, *Quantum physics of simple optical instruments*, Rep. Prog. Phys. **66**, 1207–1249 (2003).
- 4 :** P. Piwnicki and U. Leonhardt, *Optics of Moving Media*, J. Appl. Phys. B. **72**, 51–59 (2001).
- 3 :** U. Leonhardt and P. Piwnicki, *Light in moving media*, Contemp. Phys. **41**, 301–308 (2000).
- 2 :** D. S. Krähmer and U. Leonhardt, *State reconstruction of one-dimensional wave packets*, J. Appl. Phys. B **65**, 725–734 (1997).
- 1 :** U. Leonhardt and H. Paul, *Measuring the quantum state of light*, Prog. Quant. Electr. **19**, 89–130 (1995).

ORIGINAL PAPERS

- 106:** W. M. R. Simpson, S. A. R. Horsley, and U. Leonhardt, *Divergence of Casimir stress in inhomogeneous media*, Phys. Rev. A **87**, 043806 (2013).
- 105:** E. Rubino, A. Lotti, F. Belgiorno, S. L. Cacciatori, A. Couairon, U. Leonhardt, and D. Faccio, *Soliton-induced relativistic-scattering and amplification*, Scientific Reports **2**, 932 (2012).
- 104:** D. Faccio, T. Arane, M. Lamperti, and U. Leonhardt, *Optical black hole lasers*, Class. Quant. Grav. **29**, 224009 (2012).
- 103:** E. Rubino, J. McLenaghan, S. C. Kehr, F. Belgiorno, D. Townsend, S. Rohr, C. E. Kuklewicz, U. Leonhardt, F. König, and D. Faccio, *Negative-Frequency Resonant Radiation*, Phys. Rev. Lett. **108**, 253901 (2012).
- 102:** A. Greenleaf, Y. Kurylev, M. Lassas, U. Leonhardt, and G. Uhlmann, *Cloaked electromagnetic, acoustic, and quantum amplifiers via transformation optics*, PNAS **109**, 10169-10174 (2012).
- 101:** U. Leonhardt and S. Robertson, *Analytical theory of Hawking radiation in dispersive media*, New J. Phys. **14** 053003 (2012).
- 100:** Y. G. Ma, S. Sahebdivan, C. K. Ong, T. Tyc, and U. Leonhardt, *Subwavelength imaging with materials of in-principle arbitrarily low index contrast*, New. J. Phys. **14**, 025001 (2012).
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- 98 :** U. Leonhardt and W. M. R. Simpson, *Exact solution for the Casimir stress in a spherically symmetric medium*, Phys. Rev. D **84**, 081701(R) (2011).

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