

Invited International Talks

1. ***Les Houches Workshop, Atom Optics Applications***
Les Houches (France), 23-28 May 1999
"Atom lasers and coherence properties of BECs"
2. ***9th Annual International Laser Physics Workshop, LPHYS'2000***
Bordeaux (France), 17-21 July, 2000
"Atom lasers and phase coherence of Bose-gases"
3. ***Quantum Optics and Spectroscopy Seminar***
Institute for Experimental Physics, University of Innsbruck, Austria
Innsbruck, 17 January 2001
"Atom lasers"
4. ***5th RIKEN International Conference, Coherent Control in Matter***
Shonan Village Center, Hayama (Japan), 22-25 April 2001
"Atom lasers and phase coherence of Bose-gases"
5. ***Euresco Conference, Bose-Einstein condensation***
San Feliu de Guixols (Spain), 15-20 September 2001
"Quantum phase transition from a superfluid to a Mott insulator"
6. ***Physics Colloquium of the University of Innsbruck***
Innsbruck, 30 October 2001
"Quantum phase transition from a superfluid to a Mott insulator"
7. ***CUA/ITAMP Workshop, Beyond BEC: Ultracold Atoms beyond Mean-Field Physics***
Harvard, Cambridge (USA), 2-3 November 2001
"Quantum phase transition from a superfluid to a Mott insulator"
8. ***Physics Colloquium of the University of Trento***
Trento (Italy), 17 January 2002
"Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms"
9. ***Yale Physics Club, (Physics Colloquium of Yale University)***
Yale, New Haven (USA), 22 February 2002
"Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms"

10. **Stanford University, Physics & Applied Physics Department**
Stanford (USA), 6 May 2002
"Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms"
11. **DAMOP 2002 Meeting, Williamsburg**
Williamsburg (USA), May 2002
"Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms"
12. **NIST Workshop on Quantum Computing**
Gaithersburg (USA), June 2002
"Beyond mean field physics with Bose-Einstein condensates in optical lattices"
13. **International Conference on Laser Physics LPHYS 2002**
Bratislava (Slovakia), July 2002
"Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms"
14. **International Conference on Atomic Physics (ICAP) 2002**
Boston (USA), August 2002
"Seeing the particles beneath the waves – Beyond mean field physics with Bose-Einstein condensates in optical lattices"
15. **University of California Berkeley, Physics Department**
Berkeley (USA), August 2002
"Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms"
16. **7th International Workshop on Atom Optics and Interferometry**
Lunteren (Netherlands), September/October 2002
"Beyond mean field physics with Bose-Einstein condensates in optical lattices"
17. **Stanford University, Physics Colloquium**
Stanford (USA), 5 November 2002
"Seeing the particles beneath the waves"
18. **NIST Seminar**
Gaithersburg (USA), 7 November 2002
"Controlled collisions with neutral atoms in optical lattices"
19. **Royal Society workshop on "Practical realizations of quantum computing"**
London (UK), 13-14 November 2002
"Controlled collisions with neutral atoms in optical lattices"

20. ***Collège de France Symposium “Cold atoms and quantum information”***
Paris (France), 7 February 2002
”Controlled collisions with neutral atoms in optical lattices”
21. ***American Association for the Advancement of Science (AAAS)
Quantum Phases and Quantum Phase Transitions***
Denver (USA), 15 Februar 2003
”Quantum phase transition from a superfluid to a Mott insulator in a gas of ultracold atoms”
22. ***Obergurgl Quantum Optics Meeting 2003***
Obergurgl (Austria), 24 February 2003
“Controlled Collisions with Neutral Atoms in Optical Lattices“
23. ***University of Strathclyde, Physics Department***
Glasgow (UK), 19 March 2003
”Seeing the particles beneath the waves – Beyond mean field physics with Bose-Einstein condensates in optical lattices”
24. ***Correlation Effects in Bose-Einstein Condensates and Degenerate Fermi Gases***
University of Minneapolis, Minneapolis (USA), 2-4 May 2003
”Controlled Collisions with Neutral Atoms in Optical Lattices”
25. ***Harvard University - Physics colloquium***
Harvard University, Boston (USA), 12 May 2003
”Seeing the Particles beneath the Waves – Beyond Mean Field Physics with Bose-Einstein-Condensates in Optical Lattices”
26. ***Center for Ultracold Atoms - Colloquium***
Center for Ultracold Atoms, Boston (USA), 13 May 2003
”Controlled Collisions with Neutral Atoms in Optical Lattices”
27. ***Massachusetts Institute of Technology (MIT) – Physics colloquium***
Massachusetts Institute of Technology, Boston (USA), 15 May 2003
”Seeing the Particles beneath the Waves – Beyond Mean Field Physics with Bose-Einstein-Condensates in Optical Lattices”
28. ***HANSCOM Research Laboratories***
Boston (USA), 16 May, 2003
”Bose-Einstein Condensates in Optical Lattices”
29. ***IQEC-CLEO International Quantum Electronics Conference 2003***
Baltimore (USA), 4-7 June, 2003
”Controlled Collisions with Neutral Atoms in Optical Lattices”

30. **University of Oxford – Physics Department Seminar**
Oxford (United Kingdom), 16 June, 2003
”Controlled Collisions for Multiparticle Entanglement”
31. **EQEC – European Quantum Electronics Conference 2003**
Munich (Germany), 26 June, 2003
”Controlled Collisions for Multiparticle Entanglement”
32. **Plenary Talk at the Annual Meeting of the French Physical Society SFP**
Lyon (France), 7-9 July 2003
”Bose-Einstein Condensates in Optical Lattices”
33. **Gordon Research Conference – Quantum Control of Light and Matter**
Mount Holyoke College (USA), 3-8 August 2003
”Control of Matter in Lattices of Light”
34. **Quantum Challenges Conference**
Warsaw (Poland), 4-7 September 2003
”Controlling Many-Body States of Neutral Atoms in Optical Lattices
35. **European Science Foundation - BEC2003**
San Feliu (Spain), 13-18 September 2003
”Controlled Collisions with Neutral Atoms in Optical Lattices”
36. **École-Normale-Supérieure – Physics Colloquium**
Paris (France), 20 November, 2003
”Exploring quantum matter in artificial crystals of light”
37. **Plenary Talk at the Annual Spring Meeting of the AAAS**
Seattle, (USA), 13-16 February 2004
”Controlling matter at the quantum limit”
38. **Arkadi Aronov Memorial Lecture at the Weizman Institute of Science**
Tel Aviv, (Israel), 25-29 February 2004
”Exploring quantum matter in optical lattices”
39. **Workshop on Ultra Cold Gases**
Levico, (Italy), 3-6 March 2004
”Fermionizing bosons in optical lattices”
40. **QUEST-Meeting**
La Thuile, (Suisse), 7-12 March 2004
”Engineering entanglement of ultra cold atoms in optical lattices”

41. **Plenary Talk at the Annual Spring Meeting of the American Physical Society**
Montreal, (Canada), 20-26 March, 2004
"Exploring quantum many body phases in optical lattice potentials"
42. **Conference on Ultracold Quantum Gases**
Kavli Institute, Santa Barbara, (USA), 8-15. May 2004
"Tonks-Girardeau gas in an optical lattice"
43. **College de France**
College de France, Paris (France). 25-26 May 2004
"Exploring and controlling quantum matter in artificial crystals of light"
44. **EGAS 2004, Journal of Physics B Plenary Lecture**
Rennes, (France), 4-11. July 2004
"Exploring quantum matter in artificial crystals of light"
45. **ICAP 2004**
IFSC, Rio de Janeiro, (Brazil) 24 July- 1 August 2004
"Engineering Multiparticle Entanglement with Neutral Atoms in Optical Lattices"
46. **International Conference on Quantum Logic and Communications**
Cargese,(Corse), 22 – 26 August 2004
"Neutral Atoms in Optical Lattices – from Quantum Simulators to Multiparticle Entanglement"
47. **Les Houches Workshop 2004**
Les Houches (France). 20-23 September 2004
"Neutral Atoms in Optical Lattices – from Quantum Simulators to Multiparticle Entanglement"
48. **University of Geneva - Physics Colloquium**
Geneva (Switzerland), 15 November 2004
"Exploring Strongly Correlated Quantum Matter with Ultracold Atoms in Optical Lattices"
49. **Van der Waals-Zeeman-Institute (University of Amsterdam)**
Physics Colloquium
Amsterdam (Netherlands), 11 January 2005
"Exploring Strongly Correlated Quantum Systems with Ultracold Atoms in Optical Lattices"
50. **International Seminar on Atomic Processes in Intense Laser Fields and Related Many-Body Phenomena**
Shonan Village Center (Japan), 21-23 January 2005

- ”From Quantum Simulators to Quantum Gates with Neutral Atoms in Optical Lattices”
51. ***International Meeting on Mesoscopic Physics with Matter and Waves***
Orsay (France), 21-22 March 2005
”Exploring Strongly Correlated Quantum Systems with Neutral Atoms in Optical Lattices”
 52. ***IOP – Einstein Year 2005 Symposium, Plenary talk***
Warwick (UK), 11-14 April 2005
”Exploring Quantum Matter with Ultracold Atoms in Optical Lattices”
 53. ***Annual Meeting Finnish Optical Society, Plenary talk***
Jvaskylä (Finland), 12-13 May 2005
”Exploring Quantum Matter in Artificial Crystals of Light”
 54. ***Aspen Workshop on Ultracold Quantum Gases***
Aspen (USA), 4-6 June 2005
Lecture Series on “Correlations and Coherent Spin Oscillations”
 55. ***Quantum Optics VI, EQEC***
Munich (Germany), 17 June 2005
“Spatial Quantum Noise Interferometry and more...”
 56. ***International Conference on Quantum Electronics, IQEC 2006***
Tokyo (Japan), 13-16 July 2005
“Mott Insulators, Noise Correlations and Coherent Spin Dynamics in Optical Lattices”
 57. ***Low-D Workshop Amsterdam***
Amsterdam (Netherlands), 28-30 July 2005
“Strongly Correlated Quantum Matter in Optical Lattices”
 58. ***Low Temperature Physics 24, Plenary talk***
Orlando (USA), 10-12 August 2005
“Mott Insulators, Noise Correlations and Coherent Spin Dynamics in Optical Lattices”
 59. ***OSA Invited Lecturer for Developing Countries***
Yerevan (Armenia), 22-26 August 2005
Lecture Series on Ultracold Atoms
 60. ***Summer School on Quantum Information***
Kochi (Japan), 1-7 September 2005

Lecture Series on Quantum Information with Ultracold Atoms in Optical Lattices

61. ***European Science Foundation Meeting on BEC***
San Feliu (Spain), 10-15 September 2005
“Mott Insulators, Noise Correlations and Coherent Spin Dynamics in Optical Lattices”
62. ***Technical University of Eindhoven, Physics Colloquium***
Eindhoven (Netherlands), 27-28 October 2005
“Exploring Quantum Matter in Crystals of Light”
63. ***AMOP Meeting of the Dutch Physical Society, Plenary talk***
Lunteren (Netherlands), 11-12 November 2005
“Mott Insulators, Noise Correlations and Coherent Spin Dynamics in Optical Lattices”
64. ***KVDS Meeting on Quantum Information***
Copenhagen (Denmark), 18-19 November 2005
“Entangling Neutral Atoms in Optical Lattices”
65. ***DAAD/DFG organized Promotional Lecture/Dinner Talk***
London (UK), 1 December 2005
“Ultracold Atoms – From Einstein’s Dream to Reality”
66. ***Non-equilibrium Phenomena in Strongly Correlated Quantum Systems, ITAMP Workshop***
Boston (USA), 9-12 February 2006
“Coherence, Correlations & Counting Statistics of Ultracold Atoms in Optical Lattices”
67. ***Ehrenfest Colloquium***
Leiden (Netherlands), 15 February 2006
“Exploring Quantum Matter in Artificial Crystals of Light”
68. ***Stockholm University (KTP), Physics Colloquium***
Stockholm (Sweden), 23-24 March 2006
“Exploring Quantum Matter in Artificial Crystals of Light”
69. ***Meeting of the Dutch and Belgian Physics Society, FYSICA 2006***
Plenary talk
Leiden (Netherlands), 28 April 2006
“New Light on Modern Optics”

70. ***Gordon Research Conference on Quantum Information Science***
Il Ciocco, Castelvechio (Italy), 7-12 May 2006
“Entangling Neutral Atoms in Optical Lattices”
71. ***Varena Summer School on “Ultracold Fermi Gases”***
Varena (Italy), 29-30 June 2006
“Strongly Correlated Quantum Matter in Optical Lattices”
72. ***ICAP 2006 (International Conference on Atomic Physics)***
Innsbruck (Austria), 16-21 July 2006
“Strongly Correlated Quantum Matter in Optical Lattices”
73. ***ICO (International Commission of Optics) Meeting, Plenary Talk***
St. Petersburg (Russia), 3-6 September 2006
“Exploring Quantum Matter in Artificial Crystals of Light”
74. ***Theory Colloquium University of Geneva***
Geneva (Switzerland), 5 October 2006
“Strongly Correlated Quantum Matter in Optical Lattices”
75. ***7th European QIPC Workshop at the Royal Society***
London (UK), 13-14 October 2006
“Quantum Information Processing with Neutral Atoms”
76. ***Canadian Institute of Advanced Research – Quantum Materials Meeting***
Vancouver (Canada), 19-21 October 2006
“Strongly correlated atoms in optical lattices”

Further Invited Talks

1. ***Spring Meeting of the German Physical Society 1999, Heidelberg, Invited Main Talk***
Heidelberg, March 1999
“Atom lasers“
2. ***Physics Colloquium of the University of Göttingen***
Göttingen, April 1999
“Atom lasers“
3. ***Max-Planck-Institute for Plasma Physics***
Garching, 3 February 2000
”Atom lasers”
4. ***Advanced training for High School physics teachers organized by the Germany Physical Society “100 years quantum physics”, (August 2000), Bonn; Lecture on “Matter Waves“***
5. ***Seminar “Quantum Optics and Spectroscopy”***
Institute for Experimental Physics, University of Innsbruck
Innsbruck, 17 January, 2001
”Atom lasers”
6. ***Physics Colloquium of the University of Oldenburg***
Oldenburg, 14 Mai 2001
“Bose-Einstein condensation and atom lasers/Experimenting with the coldest objects in the universe“
7. ***Quantum Optics Summer School, Universität Bonn***
Bonn, 20-21 August 2001
“Bose-Einstein condensation“
8. ***SFB 407 Colloquium, University of Hannover***
Hannover, 21 November 2001
“Quantum phase transition from a superfluid to a Mott insulator“
9. ***Quantum Optics and Atomic Physics Seminar, University of Heidelberg***
Heidelberg, 12 Dezember 2001
”Quantum phase transition from a superfluid to a Mott insulator in an ultracold gas of atoms”

10. ***Theoretical Quantum Optics Seminar, Ludwig-Maximilians University of Munich***
Munich, 11 February 2001
"Quantum phase transitions from a superfluid to a Mott insulator in an ultracold gas of atoms"
11. ***"Lattice days in Stuttgart", 5. Physikalisches Institut, University of Stuttgart***
Stuttgart, 28 February, 2002
"Quantum phase transitions from a superfluid to a Mott insulator in an ultracold gas of atoms"
12. ***Spring Meeting of the German Physical Society 2002, Osnabrück***
Invited Main Talk
Osnabrück, 8 March, 2002
"Quantum phase transitions from a superfluid to a Mott insulator in an ultracold gas of atoms"
13. ***Quantum Optics Summer School, University of Bonn***
Bonn, April, 2002
"Bose-Einstein condensation"
14. ***Meeting of the SPP1116 program of the DFG "Interactions in ultracold atomic and molecular gases"***
Bonn, April, 2002
"Quantum phase transitions from a superfluid to a Mott insulator in an ultracold gas of atoms"
15. ***Physics Department, University of Mainz***
Mainz, 14 May, 2002
"From a weakly interacting Bose gas to a strongly correlated Bose system"
16. ***Theory Colloquium, University of Augsburg***
Augsburg, 25 April, 2002
"From a weakly interacting Bose gas to a strongly correlated Bose system"
17. ***Physics Colloquium, University of Cologne***
Cologne, 11 June, 2002
"Quantum phase transitions from a superfluid to a Mott insulator in an ultracold gas of atoms"
18. ***Physics Colloquium, TU and LMU Munich***
Munich, 15 July, 2002
"Quantum phase transitions from a superfluid to a Mott insulator in an ultracold gas of atoms"

19. ***Interactions in Ultracold Gases: From Atoms to Molecules***
Heidelberg, September 2002
"Beyond mean field physics with Bose-Einstein condensates in optical lattices"
20. ***Max-Planck-Institut für Quantenoptik, Laserseminar***
Garching, 26 November, 2002
"Seeing the particles beneath the waves – New physics with Bose-Einstein condensates"
21. ***Physics Colloquium Gerhard-Mercator University of Duisburg***
Duisburg, 20 January, 2003
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
22. ***Physics Colloquium University of Heidelberg***
Heidelberg, 24 January, 2003
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
23. ***Physics Colloquium University of Kaiserslautern***
Kaiserslautern, 27 January, 2003
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
24. ***Physics Colloquium University of Frankfurt***
Frankfurt, 29 January, 2003
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
25. ***DPG-Spring Meeting Condensed Matter Physics – Eingeladener Hauptvortrag***
Dresden, 26 March, 2003
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
26. ***Forschergruppe Quantengase Meeting in Castle Reisenburg***
Günzburg, 3 April, 2003
"Controlled Collisions with Neutral Atoms in Optical Lattices"
27. ***Graduiertenkolleg Universität Regensburg***
Regensburg, 22 May, 2003
"Seeing the Particles beneath the Waves"
28. ***Physikalisches Kolloquium Universität Düsseldorf***
Düsseldorf, 3 July, 2003
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
29. ***Quantum Information Processing Workshop***
Bonn, 13-15 October, 2003
"Controlled Collisions for Multiparticle Entanglement of Optically Trapped Atoms"

30. ***Physics Colloquium University of Karlsruhe***
Karlsruhe, 12 December, 2003
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
31. ***Physics Colloquium at GSI Darmstadt***
Darmstadt, 13 Januar, 2004
"Seeing the particles beneath the waves – New physics with Bose-Einstein condensates"
32. ***DFG-SPP1116 Meeting***
Potsdam, 16-17. March 2004
"Photoassociation of neutral atoms in optical lattices"
33. ***Physics Colloquium at the University of Bonn***
Bonn, 18 May 2004
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
34. ***Workshop on Disordered Ultracold Quantum Gases***
Hannover, 28-28 June 2004
"From entanglement interferometry to molecule formation in optical lattices"
35. ***Workshop on "Quantum Phase Transitions"***
Bad Honnef, 12 October 2004
"Exploring strongly correlated quantum matter with ultracold atoms"
36. ***Physics Colloquium, University of Dresden***
Dresden, 18 October 2004
"Seeing Particles beneath the Waves"
37. ***Inaugural Lecture, at Mainz University***
Mainz, 28 October 2004
"Von Einsteins Traum zur Realität – Experimentieren mit den kältesten Objekten des Universums"
38. ***Colloquium at Graduation Department of Physics, Mainz University***
Mainz, 12 November 2004
"Von Einsteins Traum zur Realität – Experimentieren mit den kältesten Objekten des Universums"
39. ***Colloquium, Technische Universität Darmstadt***
Darmstadt, 26 November 2004
"Materiewellen am Aufbruch – neue Physik mit Bose-Einstein-Kondensaten"

40. ***Fritz Haber Institut of the Max-Planck-Society – Physics Colloquium***
Berlin, 25 February 2005
"Exploring Quantum Matter in Crystals of Light"
41. ***Meeting of the German Physics Society – Plenary Talk***
Berlin, 4 March 2005
"From Einsteins Dream to Reality – Experimenting with the Coldest Objects in the Universe"
42. ***New Trends in Nuclear, Atomic and Molecular Science***
Heidelberg, 12-13 March 2005
"Exploring Quantum Matter in Optical Lattices"
43. ***Physics on Saturday Morning***
Mainz, 7 May 2005
"Experimentieren mit den kältesten Objekten des Universums"
44. ***RWTH Aachen, Physics Colloquium***
Aachen, 9 May 2005
"Exploring Quantum Matter in Crystals of Light"
45. ***Einstein Year of Physics Lectures***
Bonn, 20 May 2005
"Bose-Einstein-Kondensation"
46. ***University of Tübingen, Physics Colloquium***
Tübingen, 25 May 2005
"Materiewellen am Aufbruch – Neue Physik mit Bose-Einstein-Kondensaten"
47. ***Wissenschaftssommer Berlin, Invited Lecture by the DFG for the General Public***
Berlin, 20 June 2005
"Experimentieren mit den kältesten Objekten des Universums"
48. ***Ludwig-Maximilians-University, Physics Colloquium***
Munich, 23 January 2006
"Exploring Quantum Matter in Crystals of Light"
49. ***DPG Tagung 2006, Plenary Lecture***
Frankfurt, 15 March 2006
"100 Jahre Quantenoptik, von Planck und Einstein zur Quantenoptik heute"
50. ***Naturwissenschaftliches Kolleg der Studienstiftung des deutschen Volkes***
Bad Honnef, 2-7 April 2006
Lecture series on ultracold quantum gases

51. **Graduate School on Physics of the University of Heidelberg, Honorary Colloquium**
Heidelberg, 20 April, 2006
“Experimentieren mit ultrakalten Quantengasen”
52. **Colloquium at the Max-Planck-Institute for Quantum Optics**
Garching, 23 May, 2006
“Ultracold Quantum Gases in Optical Lattices”
53. **Quantum Information in Solid State Based Systems SFB Workshop**
Herrsching, 25 May, 2006
“Entangling Neutral Atoms in Optical Lattices”
54. **Colloquium at the University of Bochum**
Bochum, 29 May, 2006
“Exploring Quantum Matter in Artificial Crystals of Light”
55. **Public evening lecture with Anton Zeilinger**
Mainz, 30 May, 2006
“Experimentieren mit den kältesten Objekten des Universums”
56. **Otto-Stern Colloquium at the University of Hamburg**
Hamburg, 6 July, 2006
“Exploring Quantum Matter in Artificial Crystals of Light”
57. **Kepler Lecture at the University of Tübingen**
Tübingen, 12 July, 2006
“New Light on Modern Optics”