

Publications by
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Vienna Center for Quantum Science & Technology, VCQ

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A) Publications listed in the Science Citation Index

1. C. Brand, F. Kialka, S. Troyer, C. Knobloch, K. Simonovic, B.A. Stickler, K. Hornberger, M. Arndt,
Bragg diffraction of large organic molecules
Phys. Rev. Lett. 125 (2020), DOI: 10.1103/PhysRevLett.125.033604
[Editor's Suggestion](#)
2. Y.Y. Fein, A. Shayeghi, F. Kialka, P. Geyer, S. Gerlich, M. Arndt,
Quantum-assisted diamagnetic deflection of molecules
Phys. Chem. Chem. Phys. (2020), DOI: 10.1039/d0cp02211j
[PCCP Hot Paper](#)
3. J. Schätti, V. Köhler, M. Mayor, Y.Y. Fein, P. Geyer, L. Mairhofer, S. Gerlich, M. Arndt,
Matter-wave interference and deflection of tripeptides decorated with fluorinated alkyl chains
J Mass Spectrom. (2020), DOI:10.1002/jms.4514
4. A. Shayeghi, P. Rieser, G. Richter, U. Sezer, J.H. Rodewald, P. Geyer, T.J. Martinez, M. Arndt,
Matter-wave interference of a native polypeptide
Nature Comm., 11, 144 (2020), DOI: 10.1038/s41467-020-15280-2
5. C. Brand, K. Simonovic, F. Kialka, S. Troyer, P., Geyer, M. Arndt,
A fiber-based beam profiler for high-power laser beams in confined spaces and ultra-high vacuum
Optics Express (2020), DOI: 10.1364/OE.387650
6. Y. Y. Fein, F. Kialka, P. Geyer, S. Gerlich, M. Arndt,
Coriolis compensation via gravity in a matter-wave interferometer
New J. Phys. (2020), DOI:10.1088/1367-2630/ab73c5
7. Y. Y. Fein, A. Shayeghi, L. Mairhofer, F. Kialka, P. Rieser, P. Geyer, S. Gerlich, M. Arndt,
Quantum-Assisted Measurement of Atomic Diamagnetism
Phys. Review X 10, 011014 (2020), DOI: 10.1103/PhysRevX.10.011014
8. Y. Y. Fein, P. Geyer, F. Kialka, S. Gerlich, M. Arndt,
Improved accuracy fullerene polarizability measurements in a long-baseline matter-wave interferometer
Phys. Rev. Res. 1, 033158 (2019), DOI: 10.1103/PhysRevResearch.1.033158
9. Y. Y. Fein, P. Greyer, P. Zwick, F. Kialka, S. Pedalino, M. Mayor, S. Gerlich and M. Arndt,
Quantum Superposition of Molecules Beyond 25kDa,
Nature Physics (2019), DOI:10.1038/s41567-019-0663-9
10. J. Schätti, M. Kriegleder, M. Debiossac, M. Kerschbaum, P. Geyer, M. Mayor, M. Arndt, V. Köhler,
Neutralization of insulin by photocleavage under high vacuum,
Chem. Commun. (2019), DOI: 10.1039/c9cc05712a
11. G. Wachter, S. Kuhn, S. Minniberger, C. Salter, P. Asenbaum, J. Millen, M. Schneider, J. Schalko, U. Schmid, A. Felgner, D. Hüser, M. Arndt, M. Trupke,
Silicon microcavity arrays with open access and a finesse of half a million,

- Light: Science & Applications 8:37, 1-7 (2019)**, DOI: 10.1038/s41377-019-0145-y
12. C. Brand, M. Debiossac, T. Susi, F. Aguillon, J. Kotakoski, P. Roncin, M. Arndt
Coherent diffraction of hydrogen through the 246 pm lattice of graphene
New J. Phys. (2019), DOI: 10.1088/1367-2630/ab05ed
 13. F. Kiařka, B. Stickler, K. Hornberger, Y.Y. Fein, P. Geyer, L. Mairhofer, S. Gerlich, M. Arndt,
Concepts for long-baseline high-mass matter-wave interferometry
Phys. Scr. **94** (2019), DOI:10.1088/1402-4896/aaf243
 14. J. Schätti, P. Rieser, U. Sezer, G. Richter, P. Geyer, G. G. Rondina, D. Häussinger, M. Mayor, A. Shayeghi, V. Köhler, M. Arndt
Pushing the mass limit for intact launch and photoionization of large neutral biopolymers
Commun. Chem. **1**, **93** (2018), DOI. 10.1038/s42004-018-0095-y
 15. B. A. Stickler, B. Papendell, S. Kuhn, B. Schriniski, J. Millen, M. Arndt, K. Hornberger
Probing macroscopic quantum superpositions with nanorotors
New J. Phys. **20**, **122001** (2018), DOI: 10.1088/1367-2630/aaece4
 16. C. Brand, B.A. Stickler, C. Knobloch, A. Shayeghi, K. Hornberger, M. Arndt
Conformer-selection by matter-wave interference
Phys. Rev. Lett. **121**, **173002** (2018), DOI: 10.1103/PhysRevLett.121.173002
 17. L. Mairhofer, S. Eibenberger, A. Shayeghi, M. Arndt
A quantum ruler for magnetic deflectometry.
Entropy **20**, **516** (2018), DOI: 10.3390/e20070516
 18. M. Debiossac, J. Schätti, M. Kriegleder, P. Geyer, A. Shayeghi, M. Mayor, M. Arndt. V. Köhler
Tailored photocleavable peptides: Fragmentation and neutralization pathways in high vacuum
Phys. Chem. Chem. Phys. **20**, **11412--11417** (2018), DOI: 10.1039/c8cp01058g
 19. J. Rodewald, N. Dörre, A. Grimaldi, P. Geyer, L. Felix, M. Mayor, A. Shayeghi, M. Arndt
Isotope-selective high-order interferometry with large organic molecules in free fall
New J. Phys. **20**, **033016** (2018), DOI: /10.1088/1367-2630/aaade2
 20. S. Kuhn, G. Wachter, F. Wieser, J. Millen, M. Schneider, J. Schalko, U. Schmid, M. Trupke, M. Arndt
Nanoparticle detection in an open-access silicon microcavity
Appl. Phys. Lett. **111**, **253107** (2017), DOI: 10.1063/1.5008492
Editor's Pick
 21. S. Kuhn, B. A. Stickler, A. Kosloff, F. Patolsky, K. Hornberger, M. Arndt and J. Millen
Optically driven ultra-stable nanomechanical rotor
Nature Comm. **8** (1) (2017), DOI: 10.1038/s41467-017-01902-9
Highlighted by Phys.Org
 22. J. P. Cotter, C. Brand, C. Knobloch, Y. Lilach, O. Cheshnovsky, M. Arndt
In search of multipath interference using large molecules
Science Adv. **3**, **e1602478** (2017), DOI: 10.1126/sciadv.1602478
Highlighted in PhysicsWorld, PhysOrg

23. L. Mairhofer, S. Eibenberger, J. P. Cotter, M. Romirer, A. Shayeghi, M. Arndt
Quantum-assisted metrology of neutral vitamins in the gas-phase
Angew. Chem. Int. Ed. **56, 6 (2017)**, DOI: 10.1002/ange.201704916
German Version: **Angew. Chem.** **129,7 (2017)**, DOI: 10.1002/ange.201704916
[Highlighted in Chemistry Views, HealthMediciNet, ProPhysik](#)
24. L. Gallego, U. Sezer, M. Arndt, M. Mayor
Long-pulse laser launch and ionization of tailored large neutral silver nanoparticles with atomic mass assignment
Nanoscale **9, 9175-9180 (2017)**, DOI: 10.1039/c7nr03297n
25. J. Schätti, U. Sezer, S. Pedalino, J. P. Cotter, M. Arndt*, M. Mayor and V. Köhler*
Tailoring the volatility and stability of oligopeptides
J. Mass Spectrom. **52, 550-556 (2017)**, DOI: 10.1002/jms.3959
26. J. Rodewald, P. Haslinger, N. Dörre, B.A. Stickler, A. Shayeghi, K. Hornberger, M. Arndt
New avenues for matter-wave-enhanced spectroscopy,
Appl. Phys. B **123,3 (2017)**, DOI 10.1007/s00340-016-6573-y
27. U. Sezer, P. Geyer, M. Kriegleder, M. Debiossac, A. Shayeghi, M. Arndt, F. Lukas, M. Mayor
Selective photodissociation of tailored molecular tags as a tool for quantum optics,
Beilstein J. Nanotechnol. **8, 325-333 (2017)**, DOI 10.3762/bjnano.8.35
28. S. Kuhn, A. Kosloff, B. A. Stickler, F. Patolsky, K. Hornberger, M. Arndt, J. Millen
Full Rotational Control of Levitated Silicon Nanorods
Optica **4, 356-360 (2017)**, DOI: doi.org/10.1364/OPTICA.4.000356
29. C. Knobloch, B. A. Stickler, C. Brand, M. Sclafani, Y. Lilach, T. Juffmann, O. Cheshnovsky, K. Hornberger, M. Arndt
On the role of the electric dipole moment in the diffraction of biomolecules at nanomechanical gratings
Prog. Phys., **1–8 (2016)**, DOI: 10.1002/prop.201600025
30. B. A. Stickler, S. Nimmrichter, L. Martinetz, S. Kuhn, M. Arndt, K. Hornberger
Ro-Translational Cavity Cooling of Dielectric Rods and Disks
Phys. Rev. A **94, 033818, (2016)**, DOI: 10.1103/PhysRevA.94.033818
31. P. Geyer, U. Sezer, J. Rodewald, L. Mairhofer, N. Dörre, P. Haslinger, S. Eibenberger, C. Brand, M. Arndt
Perspectives for Quantum Interference with Biomolecules and Biomolecular Clusters
Phys. Scr. **91, 063007-063019 (2016)**, DOI: 10.1088/0031-8949/91/6/063007
32. W.P. Schleich, et al.
Quantum technology: from research to application
Appl. Phys. B **122, 1-31 (2016)**, DOI: 10.1007/s00340-016-6353-8
33. C. Brand, M. Sclafani, C. Knobloch, Y. Lilach, T. Juffmann, J. Kotakoski, C. Mangler, A. Winter, A. Turchanin, J. Meyer, O. Cheshnovsky, M. Arndt
An atomically thin matter-wave beam splitter
Nature Nanotechnology**10, 845 - 848 (2015)**, DOI: 10.1038/nnano.2015.179
[Nature Nano: News & Views by P. Treutlein](#)

Highlighted by Physics World

34. M. Arndt, C. Brand
Interference of atomic clocks
Science **349**, 1168-1169 (2015), DOI: 10.1126/science.aad0683
35. C. Brand, J. Fiedler, T. Juffmann, M. Sclafani, C. Knobloch, S. Scheel, Y. Lilach, O. Cheshnovsky, M. Arndt
A Green's function approach to modeling molecular diffraction in the limit of ultra-thin gratings
Ann. Phys. **527**, 580-591 (2015), DOI: 10.1002/andp.201500214
36. M. Tomandl, T. Mieling, C. Losert-Valiente Kroon, M. Hopf, M. Arndt
Simulated Interactive Research Experiments as Educational Tools for Advanced Science
Scientific Reports **5**, 14108 (2015), DOI: 10.1038/srep14108
Highlighted by Phys.org, PhysicsNews, Le Scienze and others
37. S. Kuhn, P. Asenbaum, A. Kosloff, M. Sclafani, B. A. Stickler, S. Nimmrichter, K. Hornberger, O. Cheshnovsky, F. Patolsky, M. Arndt
Cavity-assisted manipulation of freely rotating silicon nanorods in high vacuum
Nano Letters **15**, 5604-5608 (2015), DOI: 10.1021/acs.nanolett.5b02302
38. J. Kotakoski, C. Brand, Y. Lilach, O. Cheshnovsky, C. Mangler, M. Arndt, J. C. Meyer
Towards two-dimensional all-carbon heterostructures via ion beam patterning of single-layer graphene
Nano Letters (2015), DOI: 10.1021/acs.nanolett.5b02063
39. J. P. Cotter, S. Eibenberger, L. Mairhofer, X. Cheng, P. Asenbaum, M. Arndt; K. Walter, S. Nimmrichter, K. Hornberger
Coherence in the presence of absorption and heating in a molecule interferometer
Nature Communications **6**, 7336 (2015), DOI: 10.1038/ncomms8336
40. U. Sezer, L. Wörner, J. Horak, L. Felix, J. Tüxen, C. Götz, A. Vaziri, M. Mayor, M. Arndt
Laser-induced acoustic desorption of natural and functionalized biochromophores
Anal. Chem. **87**, 5614-5619 (2015), DOI: 10.1021/acs.analchem.5b00601
41. U. Sezer, P. Schmid, L. Felix, M. Mayor, M. Arndt
Stability of high-mass molecular libraries: the role of the oligoporphyrin core
J. Mass Spectrom. **50**, 235-239 (2015); DOI: 10.1002/jms.3526
42. J. Espigulé-Pons, C. Götz, A. Vaziri, M. Arndt
Physical Constraints for the Stoneham Model for Light-Dependent Magnetoreception
arXiv:1412.7369 (2014)
43. N. Dörre, P. Haslinger, J. Rodewald, P. Geyer, M. Arndt,
A refined model for Talbot-Lau matter-wave optics with pulsed photo-depletion gratings
JOSA B **32**, 114-120 (2015), DOI: 10.1364/JOSAB.32.000114
44. N. Dörre, J. Rodewald, P. Geyer, B. von Issendorff, P. Haslinger, M. Arndt
Photofragmentation beam splitters for matter-wave interferometry
Phys. Rev. Lett. **113**, 233001 (2014), DOI: 10.1103/PhysRevLett.113.233001
Editor's Choice & Viewpoint in Physics **7**, 122 (2014) by Gil Summy

45. C. Emary, J. P. Cotter, M. Arndt
Testing macroscopic realism through high-mass interferometry.
Phys. Rev. A **90**,042114-1 (2014), DOI: 10.1103/PhysRevA.90.042114
46. L. Felix, U. Sezer, M. Arndt, M. Mayor,
Synthesis of Highly Fluoroalkyl-Functionalized Oligoporphyrin Systems,
Eur. J. Org. Chem.6884–6895 (2014), DOI: 10.1002/ejoc.201402816
[Wiley Hot Topics in Fluorine Chemistry](#)
47. S. Eibenberger, X. Cheng, J. P. Cotter, M. Arndt
Absolute absorption cross sections from photon recoil in a matter-wave interferometer
Phys. Rev. Lett.112, 250402 (2014), DOI: 10.1103/PhysRevLett.112.250402
48. M. Arndt
De Broglie's meter stick: Making measurements with matter waves.
Phys. Today **67**, 30-36, (2014), DOI: 10.1063/PT.3.2381
49. M. Arndt, K. Hornberger
Insight review: Testing the limits of quantum mechanical superpositions
Nature Physics10, 271-277 (2014), DOI: 10.1038/nphys2863
50. M. Tomandl, CM Losert-Valiente Kroon, M. Hopf, M. Arndt
Interaktive Forschungssimulationen
Praxis der Naturwissenschaften **8**, 31 - 36 (2013)
51. P. Asenbaum, S. Kuhn, S. Nimmrichter, U. Sezer, M. Arndt
Cavity cooling of free silicon nanoparticles in high vacuum
Nature Communications **4**, 2743 (2013), DOI: 10.1038/ncomms3743
52. T. Juffmann, H. Ulbricht, M. Arndt
Experimental methods of molecular matter-wave optics
Rep. Progr. Phys.76, 086402 (2013), DOI: 10.1088/0034-4885/76/8/086402
53. S. Eibenberger, S. Gerlich, M. Arndt, M. Mayor, J. Tüxen,
Matter-wave interference with particles selected from a molecular library with masses exceeding 10 000 amu
Phys. Chem. Chem. Phys. **15**, 14696 (2013), DOI: 10.1039/C3CP51500A
54. M. Sclafani, T. J. Juffmann, C., Knobloch, M., Arndt
*Quantum coherent propagation of complex molecules through the frustule of the alga *Amphipleura pellucida*,*
New Journal of Physics **15**, 083004 (2013), DOI: 10.1088/1367-2630/15/8/083004
[See the Video Abstract featured in Physics World 9/2013](#)
55. P. Schmid, F. Stöhr, M. Arndt, J. Tüxen, M. Mayor
Single-Photon Ionization of Organic Molecules
J. Am. Soc. Mass Spectrom. **24**, 602-8 (2013), DOI: 10.1007/s13361-012-0551-3
56. M. Arndt
Viewpoint: Free-Falling Interferometry
Physics **6**, 23 (2013), DOI: 10.1103/Physics.6.23
57. P. Haslinger, N. Dörre, P. Geyer, J. Rodewald, S. Nimmrichter, M. Arndt

- A universal matter-wave interferometer with optical ionization gratings in the time domain*
Nature Physics **9**, 144–148 (2013), DOI: 10.1038/nphys2542
[News & Views, Nature Physics](#) by A. Cronin & W. Holmgren
58. M. Arndt, A. Ekers, W. von Klitzing, H. Ulbricht
Focus on modern frontiers of matter wave optics and interferometry, Editorial
New J. Phys. **14**, 125006 (2012), DOI: 10.1088/1367-2630/14/12/125006
59. T. Juffmann, A. Milic, M. Müllneritsch, P. Asenbaum, A. Tsukernik, J. Tüxen, M. Mayor, O. Cheshnovsky, M. Arndt
Real-time single-molecule imaging of quantum interference
Nature Nanotechnology **7**, 297 - 300 (2012), DOI:10.1038/nnano.2012.34
[News & Views of Nature Nanotechnology](#), by B. Z. Zhao & W. Schöllkopf
[Cover page of Nature Nanotechnology May 2012](#)
 Chosen 2016 by Nature Nanotechnology to be among the best science pictures in 10 years of the Nature Nanotechnology
60. M. Sclafani, M. Marksteiner, F. McLennan Keir, A. Korneev, A. Semenov, G. Gol'tsman, M. Arndt
Characterization of a superconducting nanowire detector for low energy ions
Nanotechnology **23**, 065501 (2012), DOI: 10.1088/0957-4484/23/6/065501
[Featured as IOP Labtalk](#)
61. K. Hornberger, S. Gerlich, S. Nimmrichter, P. Haslinger, M. Arndt
Colloquium: Quantum interference with clusters and molecules
Rev. Mod. Phys. **84**, 157-173 (2012), DOI: 10.1103/RevModPhys.84.157
[Highlighted in Nature Physics](#) by M. Buchanan, Feb. 2012
62. T. Juffmann, S. Nimmrichter, M. Arndt, H. Gleiter, K. Hornberger
New prospects for de Broglie interferometry: Grating diffraction in the far-field and Poisson's spot in the near-field
Found. Phys. **42**, 98-110 (2012), DOI: 10.1007/s10701-010-920-5
63. P. Asenbaum, M. Arndt
Cavity stabilization using the weak intrinsic birefringence of dielectric mirrors
Optics Letters **36**, 3720-3722 (2011), DOI: 10.1364/OL.36.003720
64. J. Tüxen, S. Eibenberger, S. Gerlich, M. Arndt, M. Mayor
Highly Fluorous Porphyrins as Model Compounds for Molecule Interferometry
Eur. J. Org. Chem. **25**, 4823–4833 (2011); DOI: 10.1002/ejoc.201100638
[Featured by Chemistry Views](#)
65. S. Nimmrichter, P. Haslinger, K. Hornberger, M. Arndt
Concept of an ionizing time-domain matter-wave interferometer
New J. Phys. **13**, 075002 (2011), DOI: 10.1088/1367-2630/13/7/075002
66. M. Arndt
Coherence from spontaneity
Nature Physics **7**, 375–376 (2011), DOI: 10.1038/nphys1987
67. S. Nimmrichter, K. Hornberger, P. Haslinger, M. Arndt
Testing spontaneous localization theories with matter-wave interferometry
Phys. Rev. A **83**, 043621 (2011), DOI: 10.1103/PhysRevA.83.043621

Featured by *British Daily Telegraph* Dec. 2012

68. S. Eibenberger, S. Gerlich, M. Arndt, J. Tüxen, M. Mayor
Electric moments in molecule interferometry
New J. Phys. **13** 043033 (2011), DOI: 10.1088/1367-2630/13/4/043033
Featured as *IOP Select* May 2011
69. S. Gerlich, S. Eibenberger, M. Tomandl, S. Nimmrichter, K. Hornberger, P. J. Fagan, J. Tüxen, M. Mayor, M. Arndt,
Quantum interference of large organic molecules
Nature Communications **2**, 263 (2011), DOI 10.1038/ncomms1263
Featured by *Nature Communications* April 5th 2011, Highlight by *Nature* April 5th 2011
TOP100 Science Stories in *Discover Magazine* 2/2012
70. T. Juffmann, S. Nimmrichter, M. Arndt, H. Gleiter, K. Hornberger
New prospects for de Broglie interferometry: Grating diffraction in the far-field and Poisson's spot in the near-field
Found. Phys. **42**, 98–110 (2012), DOI 10.1007/s10701-010-9520-5
71. S. Nimmrichter, K. Hammerer, P. Asenbaum, H. Ritsch, M. Arndt
Master equation for the motion of a polarizable particle in a multimode cavity
New J. Phys. **12**, 083003 (2010), DOI:10.1088/1367-2630/12/8/083003
72. A. Dreas, M. Müllneritsch, T. Juffmann, C. Cioffi, M. Arndt, M. Mayor
Immobilization of Zinc Porphyrin Complexes on Pyridine-Functionalized Glass Surfaces
Langmuir **26**(13), 10822–10826 (2010), DOI:10.1021/la100638u
73. J. Tüxen, S. Gerlich, S. Eibenberger, M. Arndt and M. Mayor
Quantum interference distinguishes between constitutional isomers
Chem. Commun. **46**, Issue 23, pp. 4145-4147 (2010), DOI: 10.1039/c0cc00125b
74. M. Gring, S. Gerlich, S. Eibenberger, S. Nimmrichter, T. Berrada, M. Arndt, H. Ulbricht, K. Hornberger, M. Müri, M. Mayor, M. Boeckmann, N. Doltsinis
Influence of conformational molecular dynamics on matter wave interferometry
Phys. Rev. A **81**, 031604(R) (2010), DOI: 10.1103/PhysRevA.81.031604
APS: Selected for the Virtual Journal of Atomic Quantum Fluids 2, Issue 4 (2010)
75. T. Juffmann, S. Truppe, P. Geyer, S. Deachapunya, H. Ulbricht, M. Arndt
Wave and Particle in Molecular Interference Lithography
Phys. Rev. Lett. **103**, 263601 (2009), DOI: 10.1103/PhysRevLett.103.263601
PRL: Editor's Suggestions
APS: Selected for the Virtual Journal of Nanoscale Science & Technology, Vol.11 (2010)
APS: Selected for the Virtual Journal of Atomic Quantum Fluids Vol. 2 (1) (2010)
76. M. Arndt, M. Aspelmeyer, A. Zeilinger
How to extend quantum experiments
Fortschr. Phys. **57**, 1153 – 1162 (2009), DOI: 10.1002/prop.200900104
77. M. Arndt, T. Juffmann, V. Vedral
Quantum Physics Meets Biology
HFSP Journal **3**, 386-400 (2009), DOI: 10.2976/1.3244985

78. W. B. Case, M. Tomandl, S. Deachapunya, M. Arndt
Realization of Optical Carpets in the Talbot and Lau Configurations
Optics Express ,**17** 20966–20974 (2009), DOI: 10.1364/OE.17.020966
79. M. Marksteiner, A. Divochiy, M. Sclafani, P. Haslinger, H. Ulbricht, Al Korneev, A. Semenov, G. Gol'tsman, M. Arndt
A Superconducting NbN detector for neutral nanoparticles
Nanotechnology **20**, 455501 (2009), DOI: 10.1088/0957-4484/20/45/455501
80. M. Marksteiner, P. Haslinger, M. Sclafani, H. Ulbricht, M. Arndt
UV and VUV ionization of organic molecules, clusters and complexes
J. Phys. Chem. A **113** (37), pp. 9952–9957 (2009), DOI:10.1021/jp905039f
81. K. Hornberger, S. Gerlich, H. Ulbricht, L. Hackermüller, S. Nimmrichter, I. V. Goldt, O. Boltalina, M. Arndt
Theory and experimental verification of Kapitza-Dirac-Talbot-Lau interferometry
New J. Phys. **11**, 043032 (2009), DOI:10.1088/1367-2630/11/4/043032
[IOP select, April 2009](#)
82. Amelino-Camelia et al.
GAUGE: the GrAnd Unification and Gravity Explorer
Exper. Astron.,**23**,549-572 (2009), DOI: 10.1007/s10686-008-9086-9
83. Ertmer, W. et al.
Matter wave explorer of gravity (MWXG)
Exper. Astron. **23**, 611-649 (2008), DOI: 10.1007/s10686-008-9125-6
84. S. Nimmrichter, K. Hornberger, H. Ulbricht, M. Arndt
Absolute absorption spectroscopy based on molecule interferometry
Phys. Rev. A**78**, 063607 (2008), DOI: 10.1103/PhysRevA.78.063607
also “Virtual Journal of Nanoscale Science & Technology”
85. S. Gerlich, M. Gring, H. Ulbricht, K. Hornberger, J. Tüxen, M. Mayor, M. Arndt
Matter-Wave Metrology as a Complementary Tool for Mass Spectrometry
Angew. Chem. Int. Ed.**47**, 6195 –6198, (2008), DOI 10.1002/anie.200801942
Angew. Chem. **120**, 6290 –6293 (2008)
[VIP paper and Cover Page at Angew. Chemie](#)
86. M. Marksteiner, P. Haslinger, H. Ulbricht, M. Sclafani, H. Oberhofer, C. Dellago, M. Arndt
Gas-phase formation of large neutral alkaline-earth metal tryptophan complexes
J. Am. Soc. Mass. Spectrom.**19**, 1021 – 1026 (2008), DOI: 10.1016/j.jasms.2008.04.028
87. A. Stefanov, M. Berninger, M. Arndt
A novel design for electric field deflectometry on extended molecular beams
Meas. Sci. Technol.**19** 055801 (2008), DOI: 10.1088/0957-0233/19/5/055801
88. H. Ulbricht, M. Berninger, S. Deachapunya, A. Stefanov, M. Arndt
Gas phase sorting of fullerenes, polypeptides and carbon nanotubes
Nanotechnology **19**, 045502 (2008), DOI: 04550210.1088/0957-4484/19/04/045502
[Nanotechweb.org labtalk 1/2008](#)

89. S. Deachapunya, P. J. Fagan, A. G. Major, E. Reiger, H. Ritsch, A. Stefanov, H. Ulbricht, M. Arndt
Slow beams of massive molecules
Eur. Phys. J. D46, 307 (2008), DOI: 10.1140/epjd/e2007-00301-8
90. L. Hackermüller, K. Hornberger, S. Gerlich, M. Gring, H. Ulbricht, M. Arndt
Optical polarizabilities of large molecules measured in near-field interferometry
Appl. Phys. B89, 469 – 473 (2007), DOI: 10.1007/s00340-007-2873-6
91. S. Gerlich, L. Hackermüller, K. Hornberger, A. Stibor, H. Ulbricht, F. Goldfarb, T. Savas, M. Müri, M. Mayor, M. Arndt
A Kapitza-Dirac-Talbot-Lau interferometer for highly polarizable molecules
Nature Physics 3, 711 (2007), DOI:10.1038/nphys701
Research highlights by NATURE & NATURE PHYSICS (8/2007)
92. M. Berninger, A. Stefanov, S. Deachapunya, M. Arndt
Polarizability measurements in a molecule near-field interferometer
Phys. Rev. A. 76, 013607 (2007), DOI: 10.1103/PhysRevA.76.013607
APS selected : Virtual Journal of Nanoscale Science & Technology, Vol.16No.4 (2007)
93. S. Deachapunya, A. Stefanov, M. Berninger, H. Ulbricht, E. Reiger, N. L. Doltsinis, M. Arndt
Thermal and electrical properties of porphyrin derivatives and their relevance for molecule interferometry
J. Chem. Phys. 126, 164304 (2007), DOI: 10.1063/1.2721563
94. N. Gotsche, H. Ulbricht, M. Arndt
UV-VIS absorption spectroscopy of large molecules for applications in matter wave interferometry
Laser Physics 17, No. 4, 583–589 (2007), DOI: 10.1134/S1054660X07040433
95. E. Reiger, L. Hackermüller, M. Berninger, M. Arndt
Exploration of gold nanoparticle beams for matter wave interferometry
Opt. Comm. 264, 326-332 (2006), DOI:10.1016/j.optcom.2006.02.060
96. M. Marksteiner, G. Kiesewetter, L. Hackermüller, H. Ulbricht, M. Arndt
Cold Beams of Biomolecules for Quantum Optics
Acta Phys. Hung. A 26/1–2, 87–94 (2006), DOI: 10.1556/APH.26.2006.1-2.12
97. M. Arndt
Quantum physics - Coherence in molecular nitrogen
Nature Physics 1, Issue 1, pp 19-20 (2005), DOI: 10.1038/nphys118
98. A. Stibor, André Stefanov, Fabienne Goldfarb, Elisabeth Reiger, Markus Arndt
A scalable optical detection scheme for matter wave interferometry
New Journal of Physics 7, 224 (2005), DOI: 10.1088/1367-2630/7/1/224
“New Journal of Physics” highlight of 2005
99. K. Hornberger, L. Hackermüller, M. Arndt
Influence of molecular temperature on the coherence of fullerenes in a near-field interferometer
Physical Review A71, Issue 2A, pp 216-223 (2005), DOI: 10.1103/PhysRevA.71.023601

100. A. Stibor, K. Hornberger, L. Hackermüller, A. Zeilinger, M. Arndt
Talbot-Lau interferometry with fullerenes: Sensitivity to inertial forces and vibrational dephasing
Laser Physics 15, 10-17 (2005)
101. M. Arndt, K. Hornberger, A. Zeilinger
Probing the limits of the quantum world
Physics World 18, 35 -40 (2005), DOI: 10.1088/2058-7058/18/3/28
102. M. Arndt, L. Hackermüller, E. Reiger
Interferometry with Large Molecules: Exploration of Coherence, Decoherence and Novel Beam Methods
Braz. J. of Phys. 35, 216-223 (2005), DOI: 10.1590/S0103-97332005000200004
103. L. Hackermüller, K. Hornberger, B. Brezger, A. Zeilinger, M. Arndt
Decoherence of matter waves by thermal emission of radiation
NATURE 427, 711–714 (2004), DOI: 10.1038/nature02276
[IOP physics highlight & APS physics news of 2004](#)
104. A. Chatzidimitriou-Dreismann, M. Arndt
Quantum Mechanics and Chemistry: The relevance of nonlocality and entanglement for molecules
Angew. Chem. 116, 146–147 (2004), DOI: 10.1002/anie.200320079
105. A. Stefanov, A. Stibor, A. Dominguez-Clarimon, M. Arndt
Sublimation enthalpy of dye molecules measured using fluorescence
J. of Chem. Phys. 121, Issue 14, pp 6935 – 6940 (2004), DOI: 10.1063/1.1792551
106. K. Hornberger, J. Sipe, M. Arndt
Theory of decoherence in a matter wave Talbot-lau interferometer
Physical Review A 70, 053608 (2004), DOI: 05360810.1103/PhysRevA.70.053608
107. L. Hackermüller, S. Uttenthaler, K. Hornberger, E. Reiger, B. Brezger, A. Zeilinger, M. Arndt
Wave nature of biomolecules and fluorofullerenes
Phys. Rev. Lett. 91, 90408 (2003), DOI: 10.1103/PhysRevLett.91.090408
• [NATURE News, 5th September 2003](#)
• [IOP Physics News, 5th September 2003](#)
• [Virtual Journal of Nanoscale Science & Technology, 8 \(10\), September 8 \(2003\)](#)
108. K. Hornberger, S. Uttenthaler, B. Brezger, L. Hackermüller, M. Arndt, A. Zeilinger
Collisional Decoherence Observed in MatterWave Interferometry
Phys. Rev. Lett. 90, 160401 (2003), DOI: 10.1103/PhysRevLett.90.160401
APS : Virtual Journal of Nanoscale Science & Technology, 7 (18), May 5,(2003)
109. L. Hackermüller, K. Hornberger, B. Brezger, A. Zeilinger, M. Arndt
Decoherence in a Talbot Lau interferometer: the influence of molecular scattering
Appl. Phys. B77, 781 - 787 (2003), DOI: 10.1007/s00340-003-1312-6
110. O. Nairz, M. Arndt, A. Zeilinger
Quantum Interference Experiments with Large Molecules
Am. J. Phys. 71, 319 (2003), DOI: 10.1119/1.1531580

111. B. Brezger, M. Arndt, A. Zeilinger
Concepts for near-field interferometers with large molecules
J. Opt. B: Quantum Semiclass. Opt. **5**, Issue 2, ppS82-S89 (2003), DOI: 10.1088/1464-4266/5/2/362
112. O. Nairz, M. Arndt, A. Zeilinger
Experimental verification of the Heisenberg uncertainty principle for fullerene molecules
Phys. Rev. A. **65**, pp. 032109 (2002), DOI: 10.1103/PhysRevA.65.032109
113. B. Brezger, L. Hackermüller, S. Uttenthaler, J. Petschinka, M. Arndt, A. Zeilinger
Matter-Wave Interferometer for Large Molecules
Phys. Rev. Lett. **88**, pp. 100404 (2002), DOI: 10.1103/PhysRevLett.88.100404
[APS News update 2002](#)
114. O. Nairz, B. Brezger, M. Arndt, A. Zeilinger
Diffraction of complex molecules by structures made of light
Phys. Rev. Lett. **87**, 160401/1-4 (2001), DOI: 10.1103/PhysRevLett.87.160401
[Research highlights by NATURE](#)
115. M. Arndt, O. Nairz, J. Petschinka, A. Zeilinger
High Contrast Interference with C60 and C70
C. R. Acad. Sci. Paris, t.2, Série IV, p. 581-585 (2001), DOI: 10.1016/S1296-2147(01)01189-1
116. S. Franke-Arnold, M. Arndt, A. Zeilinger
Magneto-optical effects with cold Lithium atoms
J. Phys. B.: At. Mol. Opt. Phys. **34**, 2527-2536 (2001), DOI: 10.1088/0953-4075/34/12/316
117. O. Nairz, M. Arndt, A. Zeilinger
Experimental Challenges in Fullerene Interferometry
Journal of Modern Optics **47**, 2811-2821 (2000), DOI: 10.1080/09500340008232198
118. M. Arndt, O. Nairz, J. Voss-Andreae, C. Keller, G. van der Zouw, A. Zeilinger
Wave-particle duality of C60 molecules
Nature **401**, 680-682, 14.October (1999); DOI:10.1038/44348
[APS physics highlight of 1999](#)
119. P. Sziftgiser, D. Guéry-Odelin, P. Desbiolles, J. Dalibard, M. Arndt, A. Steane
Interferometry and Dissipative Optics with Atoms
Acta Physica Polonica, **93** (1), 197-209 (1998)
120. M. Arndt, M. Ben Dahan, D. Guéry-Odelin, M. Reynolds, J. Dalibard
Observation of a zero-energy resonance in Cs-Cs collisions
Phys.Rev. Lett. **79**, Issue 4 pp.625-628 (1997), DOI: 10.1103/PhysRevLett.79.625
121. P. Desbiolles, M. Arndt, P. Sziftgiser, J. Dalibard
Dissipative atom optics
Journal of Modern Optics. **44**, p.1827-36 (1997), DOI: 10.1080/09500349708231849
122. P. Sziftgiser, D. Guéry-Odelin, M. Arndt, J. Dalibard
Atomic wave diffraction and interference using temporal slits

- Phys. Rev. Lett.** **77**, 4-7, (1996), DOI: 10.1103/PhysRevLett.77.4
123. P. Desbiolles, M. Arndt, P. Szriftgiser, J. Dalibard
Elementary Sisyphus process close to a dielectric surface
Phys. Rev. A **54**, 4292-4298 (1996), DOI: 10.1103/PhysRevA.54.4292
124. M. Arndt, P. Szriftgiser, J. Dalibard, A. Steane
Atom optics in the time domain
Phys. Rev. A **53**, 3369-3378, (1996), DOI: 10.1103/PhysRevA.53.3369
125. S. Lang, M. Arndt, T.W. Hänsch, S.I. Kanorsky, S. Lücke, S.B. Ross, A. Weis
Local field effects in the spectroscopy of Cs atoms trapped in solid 4He
Low. Temp. Phys. **22(2)**, 129-130 (1996), Fizika Nizkikh Temperatur, 22(2), 171-173 (1996)
126. M. Arndt, S. I. Kanorsky, A. Weis, T. W. Hänsch
Long Electronic Spin Relaxation Times of Cs Atoms in Solid 4He
Phys. Rev. Lett. **74**, 1359-1362 (1995), DOI: 10.1103/PhysRevLett.74.1359
127. A. Buchleitner, D. Delande, J. Zakrzewski, R. N. Mantegna, M. Arndt, H. Walther
Multiple Time Scales in the Microwave Ionization of Rydberg Atoms
Phys. Rev. Lett. **75**, 3818-3821 (1995), DOI: 10.1103/PhysRevLett.75.3818
128. S. Lang, S. I. Kanorsky, M. Arndt, S. B. Ross, T. W. Hänsch, A. Weis
The Hyperfine Structure of Cs Atoms in the b.c.c. Phase of Solid 4He
Europhys. Lett. **30**, 233-237 (1995), DOI: 10.1209/0295-5075/30/4/008
129. O. Benson, A. Buchleitner, G. Raithel, M. Arndt, R. N. Mantegna, H. Walther
From Coherent to Noise-Induced Microwave Ionization of Rydberg Atoms
Phys. Rev. A **51**, 4862-4876 (1995), DOI: 10.1103/PhysRevA.51.4862
130. M. Arndt, R. Dziewior, S. I. Kanorsky, A. Weis, T. W. Hänsch
Implantation and spectroscopy of metal atoms in solid helium
Z. Phys. B. **98**, 377-381 (1995), DOI: 10.1007/BF01338409
131. A.R. Weis, S.I. Kanorsky, M. Arndt, T. W. Hänsch
Spin physics in solid helium: experimental results and applications
Z. Phys. B. **98**, 359-362 (1995), DOI: 10.1007/BF01338405
132. S.I. Kanorsky, A. Weis, M. Arndt, R. Dziewior, T. W. Hänsch,
Pressure shift of atomic resonance lines in liquid and solid Helium
Z. Phys. B. **98**, 371-376 (1995), DOI: 10.1007/BF01338408
133. P. Szriftgiser, M. Arndt, P. Desbiolles, A. Steane, J. Dalibard
Atomic cavities
Annales De Physique **20** Issue: 5-6, pp. 681-686 (1995), DOI:10.1051/anphys:199556061
134. S.I. Kanorsky, M. Arndt, R. Dziewior, A. Weis, T. W. Hänsch
Optical Spectroscopy of Atoms trapped in Solid Helium
Phys. Rev. B **49**, 3645-3647 (1994), DOI: 10.1103/PhysRevB.49.3645
135. L. Sirko, M. Arndt, P. M. Koch, H. Walther
Microwave ionization of Rb Rydberg atoms: Frequency dependence

- Phys. Rev. A** **49**, 3831-3841 (1994), DOI: 10.1103/PhysRevA.49.3831
136. S.I. Kanorsky, M. Arndt, R. Dziewior, A. Weis, T. W. Hänsch
Pressure shift and broadening of the resonance line of barium atoms in liquid helium
Phys. Rev. B **50**, S. 6296 -6302 (1994), DOI: 10.1103/PhysRevB.50.6296
137. M. Arndt, S.I. Kanorsky, A. Weis, T. W. Hänsch
Can paramagnetic atoms in superfluid helium be used to search for permanent electric dipole moments
Phys. Lett. A **174**, S. 298 - 303 (1993), DOI: 10.1016/0375-9601(93)90142-M
138. M. Arndt, A. Buchleitner, R. N. Mantegna, H. Walther
Experimental Study of Quantum and Classical Limits in Microwave Ionization of Rubidium Rydberg Atoms
Phys. Rev. Lett. **67**, S. 2435 - 2438 (1991), DOI: 10.1103/PhysRevLett.67.2435

B) Contributions to books

139. S. Gerlich, Y.Y. Fein, M. Arndt,
Interferometric tests of wave-function collapse
in “Do Wave Functions Jump?: Perspectives of the Work of GianCarloGihardi” eds. Valia Allori, Angelo Bassi, Detlef Dürr, Nino Zanghi, Springer International Publishing (2020)
DOI: 10.1007/978-3-030-46777-7
140. S. Gerlich, S. Kuhn, A. Shayeghi, M. Arndt,
The de Broglie Wave-Nature of Molecules, Clusters and Nanoparticles
in “21st Century Nanoscience - A Handbook: Nanophysics Sourcebook” ed. Klaus D. Sattler, CRC Press Taylor & Francis Group (2019)
DOI: 10.1201/9780367333003
141. C. Brand, U. Sezer, S. Eibenberger, M. Arndt,
Matter-wave physics with nanoparticles and biomolecules
in “Current Trends in Atomic Physics” eds. Antoine Browaeys, Thierry Lahaye, Trey Porto, Charles S. Adams, Leticia F. Cugliandolo, Oxford University Press (2019)
DOI: 10.1093/oso/9780198837190.001.0001
142. J. Millen, S. Kuhn, A. Kosloff, F. Patolsky, M. Arndt,
Cooling and manipulation of nanoparticles in high vacuum
Proc. SPIE, Optical Trapping and Optical Micromanipulation XIII, 9922, 99220C-99228 (2016),
DOI: 10.1117/12.2238753
143. M. Arndt, N. Dörre, S. Eibenberger, P. Haslinger, J. Rodewald, K. Hornberger, S. Nimmrichter, M. Mayor
Matter-wave interferometry with composite quantum objects
Proc. Varenna Summer School, Course 188, Società Italiana di Fisica (2014)
Printed 2014, <http://arxiv.org/abs/1501.07770>
144. M. Arndt
Über die Bedeutung von Grundlagenforschung und Wissenschaftsmanagement in Österreich ... und über Entscheidungen, die wir noch heute treffen sollten
In “Wa(h)re Forschung? Science – Change of Paradigms?” Symposium 20.-21. Mai 2010
Anlässlich der Feierlichen Sitzung der Österreichischen Akademie der Wissenschaften (ÖAW: Forschung und Gesellschaft 2), Wien, 99-113 (2011)
145. M. Arndt, K. Hornberger
Quantum interferometry with complex molecules,
Proceedings of the International school of physics “E. Fermi”, Vol. 171
Quantum Coherence in Solid State Systems
2009, IOS Press, 103-125, DOI: 978-1-60750-039-1-1
146. M. Arndt
Mesoscopic Quantum Phenomena
Contribution to the ‘Compendium of Quantum Physics’, Ed. F. Weinert, D. Greenberger et al.
in print (2009) Compendium of Quantum Physics
2009, 379-384, DOI: 10.1007/978-3-540-70626-7_118
147. M. Arndt
Semiclassical Models

Contribution to the 'Compendium of Quantum Physics', Ed. F. Weinert, D. Greenberger et al.
Compendium of Quantum Physics
2009, 697-701, DOI: 10.1007/978-3-540-70626-7_197

148. M. Arndt, L. Hackermüller, K. Hornberger, A. Zeilinger
Coherence and decoherence experiments with fullerenes
In "Decoherence, Entanglement, and Information Protection in Complex Quantum Systems", Vladimir M. Akulin, A. Sarfati, G. Kurizki (Eds.), Kluwer, Amsterdam
189, 329-352 (2005)
149. M. Arndt, T. F. Gallagher, R. G. Fernandez, M. Leibscher, T. Opatrny, P. Pillet
Internal-Translational Entanglement and Interference in Atoms and Molecules
In Decoherence, Entanglement and Information Protection in Complex Quantum Systems" Eds: V. M. Akulin, A. Sarfati, G. Kurizki and S. Pellegrin
Kluwer Academic Boston (2005)
150. M. Arndt, A. Zeilinger
Heisenberg's uncertainty and matter wave interferometry with large molecules
pp. 35–52, in Fundamental Physics, Heisenberg and Beyond
G. W. Buschhorn, J. Wess (Eds), Springer Berlin (2004)
151. M. Arndt, L. Hackermüller, K. Hornberger, A. Zeilinger
Organic molecules and decoherence experiments in a molecule interferometer
pp. 1–10 in Multiscale Methods in Quantum Mechanics, P. Blanchard, G. Dell'antonio
(Eds) Birkhäuser, Boston (2004)
152. M. Arndt, A. Zeilinger
Wave-particle experiments with large molecules
in: J. S. Al-Khalili, Quantum: A guide for the perplexed", Weidenfeld & Nicolson,
(2003)
153. M. Arndt, O. Nairz, A. Zeilinger
Wave-Particle Duality
in Year Book of Science & Technology, McGraw-Hill (2002)
154. M. Arndt, O. Nairz, A. Zeilinger
Interferometry with macromolecules: Quantum paradigms tested in the mesoscopic world
pp. 333 – 351 in: "Quantum [Un] Speakables, From Bell Quantum Information", R. A. Bertlmann, A. Zeilinger (eds.), Springer, Berlin (2002)
155. M. Arndt, O. Nairz, G. van der Zouw, A. Zeilinger
Towards Quantum Optics of Macromolecules
Yearbook of the Institute Vienna Circle, ed. D. Greenberger, A. Zeilinger , p. 221-224,
Kluwer Academic, Dordrecht (1999)

C) Conference Proceedings

156. M. Arndt, A. Bassi, D. Giulini, A. Heidmann, J.-M. Raimond
Fundamental frontiers of quantum science and technology
Procedia Computer Science 2011, doi:10.1016/j.procs.2011.12.024

157. M. Arndt, S. Gerlich, S. Eibenberger, P. Fagan, J. Tüxen, M. Mayor
Quantum interference experiments with organic molecules: Information about internal states of spatially quantum delocalized molecules
Abstracts of Papers of the Am. Chem. Soc. 241, Anaheim, CA, March 27th-31st 2011
158. S. Eibenberger, S. Gerlich, M. Tomandl, et al.
Matter wave interferometry: exploring the importance of the internal molecular properties
Proc. CLEO EUROPE/EQEC, ICM Munich, Germany, May 22-26th 2011
DOI: 10.1109/cleoe.2011.5943412 Published: 2011
159. M. Arndt, H. Ulbricht, A. Major, et al.
Molecular lithography - a quantum optical approach
Conference on Lasers & Electro-Optics Europe & 11th European Quantum Electronics Conference (CLEO/EQEC), Munich, Germany, June 14-19th 2009
DOI: 10.1109/CLEOE-EQEC.2009.5192061 Published: 01 2009
160. M. Arndt, M. Berninger, S. Deachapunya, S. Gerlich, L. Hackermüller, A. G. Major, M. Marksteiner, A. Stéfanov, H. Ulbricht
On the prospects of interferometry and deflectometry for characterizing large molecules
Eur. Phys. J. Special Topics 159, 1–9 (2008)
161. S. Gerlich, L. Hackermueller, F. Goldfarb, K. Hornberger, T. Savas, A. Stibor, H. Ulbricht, M. Arndt
A novel type of matter-wave interferometer for molecules
CLEO/Europe - IQEC 2007. München 1110 (2007) Standard Book Number: 978-1-4244-0930-3
162. M. Arndt
Quantum Information: Philosophical, Mathematical and Experimental Perspectives
Quantum Information Processing, Vol. 5, 227-232 (2006)
163. K. Hornberger, M. Arndt
Environmental localization of matter waves
Source: Entanglement and Decoherence: Mathematics and Physics of Quantum Information and Computation, ed. by F. De Martini, G. Dell'Antonio, and S. Albeverio,
Oberwolfach Reports 2, 219-221 (2005)
164. A. Stibor, A. Stefanov, F. Goldfarb, S. Deachapunya, A. Zeilinger, M. Arndt
Fluorescence methods for matter interferometry with nanosized objects
European Quantum Electronics Conference (IEEE Cat. No. 05TH8796) p.271|xviii+374 (2005)
165. F. Goldfarb, S. Deachapunya, A. Stefanov, A. Stibor, E. Reiger, M. Arndt
Fluorescence of surface adsorbed dyes: Investigation of a new detector for molecule interferometry
J. Phys.: Conf. Ser. 19, 125-133 (2005)
166. L. Hackermüller, B. Brezger, K. Hornberger, S. Uttenthaler, E. Reiger, M. Arndt, A. Zeilinger
Decoherence studies using interferometry of massive molecules
Proc EQEC 326 (2003):ISBN: 0-7803-7733-8
167. L. Hackermüller, B. Brezger, K. Hornberger, S. Uttenthaler, E. Reiger, M. Arndt, A. Zeilinger
Wave-particle duality with biomolecules and fluorinated fullerenes: A new record in matter wave interferometry
EQEC Conf. Digest (2003)

168. M. Arndt, L. Hackermüller, A. Zeilinger
Molecule Interferometry as a potential tool for nanostructuring applications
Source: Proceedings of the 4th EC/NSF Workshop on Nanotechnology, Tools and Instruments for Research and Manufacturing, Grenoble, France, June 12.-13. (2002)
169. M. Arndt, O. Nairz, J. Petschinka, J. Voss-Andreae, G. van der Zouw, C. Keller, A. Zeilinger
Coherence and Decoherence in de Broglie Interference of Fullerenes
IQEC 2000, Conf. Digest, p. 115, Nice, September (2000)
170. M. Arndt, P. Desbiolles, D. Guery-Odelin, A. Steane, P. Szaftgiser, J. Dalibard
Atom optics and interferometry with atomic mirrors
Atom Optics Conference, SAN JOSE, CA, February 10-12th 1997
ATOM OPTICS, In Series: Proc. SPIE 2995, 174-181 (1997); DOI: 10.1117/12.273755
171. A. Weis, S. Lang, S. I. Kanorsky, M. Arndt, S.B. Ross, T.W. Hänsch
Long live the spin: cesium in solid helium
Proc. 12th Int. Conf. Laser Spectr382-5 (1996)
172. M. Arndt, J. Dalibard, P. Desbiolles, W. Hänsel, P. Lemonde, O. Morice, E. Peik, H. Perrin, J. Reichel, C. Salomon, A. Steane, P. Szaftgiser
Atomic Cavities and Traps
Proc. 5th Symp. Freq. Stand. Metr.: Woods Hole, MA, USA, 231-42 (1996)
173. P. Szaftgiser, M. Arndt, P. Desbiolles, et al.
Atomic cavities
4th Colloquium on Lasers and Quantum Optics Location: Ecole Polytechnique Nov. 1995
Annales De Physique: 20, 681-686 (1995)
DOI: 10.1051/Anphys: 199556061
174. A. Weis, S. Kanorsky, S. Lang, M. Arndt, S. B. Ross, S. Lücke, T. W. Hänsch,
Old and new spin physics with atoms in solid helium
ProcICONO 95, SPIE Vol. 2799 p. 22-29, June 1995, St. Petersburg

D) Articles for a general physics audience

175. Markus Arndt
Viewpoint: Free-Falling Interferometry
Physics 6, 23 (2013); DOI: 10.1103/Physics.6.23
176. Markus Arndt
Exploring the limits of the quantum superposition principle
Physik Journal 12, 126, (2013)
177. M. Aspelmeyer, M. Arndt
Quantenphysik mit massereichen Objekten
Spektrum der Wissenschaft 12/12 40-44 (2012)
178. M. Arndt, M. Oberthaler, J. Schmiedmayer
Hamlet in der Quantenwelt.
Spektrum der Wissenschaft 1/12 40-44 (2012)

179. J. Schmiedmayer and M. Arndt
Embracing quantum metrology with wide arms
APS Physics September 19th 2011
180. M. Arndt, S. Gerlich, K. Hornberger, M. Mayor
Quanteninterferometrie mit komplexen Molekülen- Wie man Information über das Innenleben von Molekülen gewinnt, deren Ort man nicht kennt
Physik Journal 9 (2010) Nr. 10, 37-43
181. S. Gerlich, M. Arndt
Quantenfußball und Quantenspeerwurf: Physikspiele mit molekularen Materiewellen
Praxis der Naturwissenschaften Heft 6 (58), 5-12 (2009) und Plus Lucis (February 2009)
182. M. Arndt, L. Hackermüller, K. Hornberger
Wann wird ein Quantenobjekt klassisch?
Physik in unserer Zeit 37, 24 – 29 (2006)
183. M. Arndt, L. Hackermüller, K. Hornberger
Interferenzexperimente mit molekularen Quantenwellen
Physica plus, in English and Hebrew (2006)
184. O. Nairz, M. Arndt, A. Zeilinger
Doświadczenia z interferencją kwantową dużych cząsteczek
Postepy Fizyki 56, 114-121 (2005)
185. M. Arndt
Wann uns Quantenteilchen klassisch erscheinen,
Physik in unserer Zeit 35, 113-114 (2004)
186. M. Arndt
Freie Elektronen an sichtbarem Licht gebeugt
Physikalische Blätter, 57 (11) , p. 20 (2001)
187. M. Arndt
Quantenoptik mit Molekülen und Clustern
DieUniversität.at 17.8.2001
188. M. Arndt, A. Zeilinger
Wo ist die Grenze der Quantenwelt?
Physikalische Blätter, 56, No. 3, 69-71, (2000)
189. M. Arndt
Quanteninterferenzen großer Moleküle
Mitteilungsblatt der ÖPG, Vol. 4, pp. 8-17, (2000)
190. M. Arndt, O. Nairz
Grenzgänger: Welle-Teilchen Dualismus von C60
Plus Lucis 3, 5-7 (1999)
191. M. Arndt
Optische Spektroskopie und Magnetresonanz an Metallatomen in fl. und festem 4-He
MPQ-Report 197, Dissertation, Garching (1995)

E) Patents

192. P.Geyer, M.Arndt, U.Sezer,
Protective eyewear for laser radiation.
Patent Application Publication WO2017182431A1 (18.4.2016).

193. H. Ulbricht, N. Gotsche, M. Arndt
Devices for and methods of handling nanowires
Patent Application Publication No. WO2009/000285 A1 (31.12.2008)