

# Curriculum Vitae (CV) of Tom Kirchner

## A. Personal

Tom Kurt Rainer Kirchner, Dr. phil. nat., Associate Professor of Physics

### 1. Degrees

- 06/1999 Dr. phil. nat. (“summa cum laude”), Institut für Theoretische Physik der Johann Wolfgang Goethe-Universität, Frankfurt a.M., Germany. Thesis (supervisor: Prof. Dr. R. M. Dreizler): “A quantum mechanical description of many-electron processes in ion-atom collisions”
- 07/1995 ‘Diplom-Physiker’ (“mit Auszeichnung”), Johann Wolfgang Goethe-Universität, Frankfurt a.M., Germany. Thesis (supervisor: Prof. Dr. R. M. Dreizler): “Models for the analysis of optical potentials for time-dependent quantum systems”

### 2. Employment History

- since 07/2012 Associate Professor (Theoretical Atomic Physics) at the Department of Physics and Astronomy, York University (w/ tenure)
- 07/2008 – 06/2012 Assistant Professor (Theoretical Atomic Physics) at the Department of Physics and Astronomy, York University (tenure track)
- 03/2003 – 02/2009 “Juniorprofessor” at the Institut für Theoretische Physik, Clausthal University of Technology, Germany (w/o tenure)
- 03/2002 – 02/2003 Postdoctoral research staff with Prof. Dr. J. Ullrich at the Max-Planck-Institut für Kernphysik, Heidelberg, Germany
- 09/1999 – 02/2002 Postdoctoral fellow with Prof. Dr. M. Horbatsch at the Department of Physics and Astronomy, York University, Toronto, Canada
- 05/1998 – 08/1999 Research assistant at the Institut für Theoretische Physik, Johann Wolfgang Goethe-Universität Frankfurt a.M., Germany

## B. Scholarly and Professional Contributions

### 1. Summary of Publications and Professional Contributions

- 69 refereed publications (including three publications in Phys. Rev. Lett.), two forthcoming and one submitted
- One published book chapter and three forthcoming
- 22 invited talks at international conferences and meetings
- 25 invited seminar and colloquium talks
- 74 oral and poster contributions at international conferences
- 44 oral and poster contributions at national conferences in Canada and Germany

## 2. Publications

### Book Chapters and Review Articles

1. T. Kirchner and H. Knudsen 2011, *Current status of antiproton impact ionization of atoms and molecules: theoretical and experimental perspectives*, J. Phys. B **44**, 12201.
2. T. Kirchner, H. J. Lüdde, and M. Horbatsch 2004, *A time-dependent quantal approach to electronic transitions in atomic collisions*, Recent Res. Devel. Physics, **5**, 433.
3. T. Kirchner 2003, *Electron interaction effects in ion-induced rearrangement and ionization dynamics: a theoretical perspective*, in: *Many-Particle Quantum Dynamics in Atomic and Molecular Fragmentation*, edited by V. P. Shevelko and J. Ullrich, (Springer, Berlin 2003).

### Articles in Refereed Journals

4. K. Kato, D. W. Fitzakerley, M. C. George, A. C. Vutha, M. Weel, C. H. Storry, T. Kirchner, and E. A. Hessels 2012, *Selective detection of metastable helium atoms by elastic scattering collisions*, Phys. Rev. A **86**, 014702.
5. M. Murakami, T. Kirchner, and M. Horbatsch 2012, *A reduced-geometry independent particle model calculation of high harmonic generation from closed-shell diatomic molecules*, Can. J. Phys. **90**, 537.
6. M. Murakami, T. Kirchner, M. Horbatsch, and H. J. Lüdde 2012, *Fragmentation of water molecules by proton impact: the role of multiple electron processes*, Phys. Rev. A **85**, 052713.
7. M. Murakami, T. Kirchner, M. Horbatsch, and H. J. Lüdde 2012, *Single and multiple electron removal processes in proton-water molecule collisions*, Phys. Rev. A **85**, 052704.
8. M. F. Ciappina and T. Kirchner 2012, *SymbMat: symbolic computation of quantum transition matrix elements*, Comput. Phys. Communications **183**, 1832.
9. L. Gulyás, A. Igarashi, and T. Kirchner 2012, *Projectile scattering in one- and two-electron transitions*, J. Phys. B **45**, 085205.
10. M. Ciappina, T. Kirchner, and M. Schulz 2011, *Double ionization of helium by highly-charged ion impact analyzed within the frozen correlation approximation*, Phys. Rev. A **84**, 034701.
11. M. F. Ciappina, M. Schulz, and T. Kirchner 2010, *Reaction dynamics in double ionization of helium by electron impact*, Phys. Rev. A **82**, 062701.
12. L. Gulyás, L. Sarkadi, A. Igarashi, and T. Kirchner 2010, *Two-electron cusp in the double ionization of helium*, Phys. Rev. A **82**, 032705.
13. M. F. Ciappina, T. Kirchner, M. Schulz, D. Fischer, R. Moshhammer, and J. Ullrich 2010, *Distorted wave theories applied to double ionization by ion impact: simulation of higher-order processes*, Journal of Atomic, Molecular, and Optical Physics **2010**, 231329

14. D. Röhrbein, T. Kirchner, and S. Fritzsche 2010, *Role of cascade and Auger effects in the enhanced population of the  $C^{3+}(1s2s2p^4P)$  states following single-electron capture in  $C^{4+}(1s2s^3S)$ -He collisions*, Phys. Rev. A **81**, 042701.
15. M. F. Ciappina, T. Kirchner, and M. Schulz 2010, *Monte Carlo event generators in atomic collisions: a new tool to tackle the few-body dynamics*, Comput. Phys. Communications **181**, 813.
16. H. J. Lüdde, T. Spranger, M. Horbatsch, and T. Kirchner 2009, *Nonperturbative, quantum-mechanical approach to ion collisions from molecular targets*, Phys. Rev. A **80**, 060702(R).
17. M. Zapukhlyak and T. Kirchner 2009, *Projectile angular-differential cross sections for electron transfer processes in ion-helium collisions: Evidence for the applicability of the independent electron model*, Phys. Rev. A **80**, 062705.
18. D. Fischer, M. Schulz, K. Schneider, M. F. Ciappina, T. Kirchner, A. Kelkar, S. Hagmann, M. Grieser, K.-U. Kühnel, R. Moshhammer, and J. Ullrich 2009, *Systematic analysis of double-ionization dynamics based on four-body Dalitz plots*, Phys. Rev. A **80**, 062703.
19. G. Schenk and T. Kirchner 2009, *Projectile electron loss in collisions of  $Ar^{6+}$  and  $Ar^{8+}$  ions with He and Ar atoms*, J. Phys. B: At. Mol. Opt. Phys. **42**, 205202.
20. N. Henkel, M. Keim, H. J. Lüdde, and T. Kirchner 2009, *Density-functional-theory investigation of antiproton-helium collisions*, Phys. Rev. A **80**, 032704.
21. M. Schulz, M. F. Ciappina, T. Kirchner, D. Fischer, R. Moshhammer, and J. Ullrich 2009, *Role of elastic projectile-electron scattering in double ionization of helium by fast proton impact*, Phys. Rev. A **79**, 042708.
22. L. Fernández-Mencheró, T. Kirchner, and H. J. Lüdde 2009, *Extension of the basis generator method for application to laser-molecule interactions*, Phys. Rev. A **79**, 023416.
23. S. Knoop, D. Fischer, Y. Xue, M. Zapukhlyak, C. J. Osborne, Th. Ergler, T. Fergner, J. Braun, G. Brenner, H. Bruhns, C. Dimopoulou, S. W. Epp, A. J. González Martínez, G. Sikler, R. Soria Orts, H. Tawara, T. Kirchner, J. R. Crespo López-Urrutia, R. Moshhammer, J. Ullrich, and R. Hoekstra 2008, *Single-electron capture in keV  $Ar^{15+...18+}$  + He collisions*, J. Phys. B: At. Mol. Opt. Phys. **41**, 195203.
24. M. F. Ciappina, M. Schulz, T. Kirchner, D. Fischer, R. Moshhammer, and J. Ullrich 2008, *Double ionization of helium by ion impact analyzed using four-body Dalitz plots*, Phys. Rev. A **77**, 062706.
25. D. Strohschein, D. Röhrbein, T. Kirchner, S. Fritzsche, J. Baran, and J. A. Tanis 2008, *Nonstatistical enhancement of the  $1s2s2p^4P$  state in electron transfer in 0.5–1.0-MeV/u  $C^{4,5+}$  + He collisions*, Phys. Rev. A **77**, 022706.
26. L. Gulyás, A. Igarashi, P. D. Fainstein, and T. Kirchner 2008, *Single and double ionization of helium: the axial symmetry*, J. Phys. B: At. Mol. Opt. Phys. **41**, 025202.

27. M. Zapukhlyak, T. Kirchner, A. Hasan, B. Tooke, and M. Schulz 2008, *Projectile angular-differential cross sections for transfer and transfer excitation in proton collisions with helium*, Phys. Rev. A **77**, 012720.
28. T. Kirchner 2007, *Laser-field enhanced electron transfer in p-Ne and p-Ar collisions*, Phys. Rev. A **75**, 025401.
29. T. Spranger, M. Zapukhlyak, and T. Kirchner 2007, *Angular differential cross sections for multiple ionisation of rare gas atoms by protons with inclusion of Auger-like processes*, J. Phys. B: At. Mol. Opt. Phys. **40**, 1081.
30. L. Gulyás, A. Igarashi, and T. Kirchner 2006, *Double ionization of helium by fast ion impact: Reexamination of the correlation function*, Phys. Rev. A **74**, 032713.
31. A. Hasan, B. Tooke, M. Zapukhlyak, T. Kirchner, and M. Schulz 2006, *Kinematically complete experiment on transfer-excitation in intermediate energy p+He collisions*, Phys. Rev. A **74**, 032703.
32. T. Kirchner, H. Tawara, I. J. Tolstihina, A. D. Ulanstev, V. P. Shevelko, and T. Stöhlker 2006, *Many-electron ionization of atoms by fast ions: normalized exponent approximation*, J. Technical Physics **76**(9), 22.
33. M. Keim, A. Werner, D. Hasselkamp, K. -H. Schartner, H. J. Lüdde, A. Achenbach, and T. Kirchner 2005, *Lyman- $\alpha$  polarisation after proton impact on atomic hydrogen*, J. Phys. B: At. Mol. Opt. Phys. **38**, 4045.
34. S. Knoop, M. Keim, H. J. Lüdde, T. Kirchner, R. Morgenstern, and R. Hoekstra 2005, *State selective single-electron capture in  $O^{6+}$ -Na collisions*, J. Phys. B: At. Mol. Opt. Phys. **38**, 3163.
35. T. Kirchner, A. C. F. Santos, H. Luna, M. M. Sant'Anna, W. S. Melo, G. M. Sigaud, and E. C. Montenegro 2005, *Charge-state correlated cross sections for electron loss, capture, and ionization in  $C^{3+}$ -Ne collisions*, Phys. Rev. A **72**, 012707.
36. M. Zapukhlyak, T. Kirchner, H. J. Lüdde, S. Knoop, R. Morgenstern, and R. Hoekstra 2005, *Inner- and outer-shell electron dynamics in proton collisions with sodium atoms*, J. Phys. B: At. Mol. Opt. Phys. **38**, 2353.
37. H. Bräuning, R. Trassl, A. Theiß, A. Diehl, E. Salzborn, M. Keim, A. Achenbach, H. J. Lüdde, and T. Kirchner 2005, *Charge transfer in  $Li^{2+} + He^{2+}$  and  $Li^{2+} + Li^{3+}$  collisions*, J. Phys. B: At. Mol. Opt. Phys. **38**, 2311.
38. T. Spranger and T. Kirchner 2004, *Auger-like processes in multiple ionization of noble gas atoms by protons*, J. Phys. B: At. Mol. Opt. Phys. **37**, 4159.
39. L. Gulyás and T. Kirchner 2004, *Ionization of Ar by energetic proton impact*, Phys. Rev. A **70**, 022704.
40. T. Kirchner 2004, *Laser-field-induced modifications of electron-transfer processes in ion-atom collisions*, Phys. Rev. A **69**, 063412.

41. T. Kirchner, M. Horbatsch, and H. J. Lüdde 2004, *Coupled mean-field description of electron removal processes in  $He^+$ -Ne and  $He^+$ -Ar collisions*, J. Phys. B: At. Mol. Opt. Phys. **37**, 2379.
42. J. A. Tanis, A. L. Landers, D. J. Pole, A. S. Alnaser, S. Hossain, and T. Kirchner 2004, *Evidence for Pauli exchange leading to excited-state enhancement in electron transfer*, Phys. Rev. Lett. **92**, 133201.
43. T. Kirchner, M. Horbatsch, M. Keim, and H. J. Lüdde 2004, *State-selective electron capture calculations for p-Ar collisions in an independent many-electron model*, Phys. Rev. A. **69**, 012708.
44. M. Keim, A. Achenbach, H. J. Lüdde, and T. Kirchner 2003, *Microscopic response effects in collisions of antiprotons with helium atoms and lithium ions*, Phys. Rev. A. **67**, 062711.
45. T. Kirchner, M. Horbatsch, and H. J. Lüdde 2002, *Time-dependent independent particle model calculation of multiple capture and ionization processes in p-Ar,  $\bar{p}$ -Ar, and  $He^{2+}$ -Ar collisions*, Phys. Rev. A **66**, 052719.
46. T. Kirchner 2002, *Manipulating ion-atom collisions with coherent electromagnetic radiation*, Phys. Rev. Lett. **89**, 093203.
47. T. Kirchner, L. Gulyás, M. Schulz, R. Moshhammer, and J. Ullrich 2002, *Doubly differential electron emission spectra in single and multiple ionization of noble gas atoms by fast highly-charged ion impact*, Phys. Rev. A. **65**, 042727.
48. T. Kirchner, M. Horbatsch, E. Wagner, and H. J. Lüdde 2002, *Modeling of polarization and correlation effects in the ionization of helium by antiprotons*, J. Phys. B: At. Mol. Opt. Phys. **35**, 925.
49. T. Kirchner, M. Horbatsch, and H. J. Lüdde 2001, *Nonperturbative calculation of charge-changing processes in  $C^{4+}$  scattering from neon atoms*, Phys. Rev. A **64**, 012711.
50. T. Kirchner and M. Horbatsch 2001, *Nonperturbative calculation of projectile electron loss, target ionization, and capture in  $He^+ + Ne$  collisions*, Phys. Rev. A **63**, 062718.
51. T. Kirchner, M. Horbatsch, H. J. Lüdde, and R. M. Dreizler 2000, *Time-dependent screening effects in ion-atom collisions with many active electrons*, Phys. Rev. A **62**, 042704.
52. L. Gulyás, T. Kirchner, T. Shirai, and M. Horbatsch 2000, *Origin of structures in the low-energy single-electron continuum in calculations for ion collisions from argon*, Phys. Rev. A **62**, 022702.
53. T. Kirchner, H. J. Lüdde, M. Horbatsch, and R. M. Dreizler 2000, *Quantum mechanical description of ionization, capture, and excitation in proton collisions with atomic oxygen*, Phys. Rev. A **61**, 052710.
54. T. Kirchner, H. J. Lüdde, and R. M. Dreizler 2000, *Effective single-particle description of single and multiple processes in  $p^\pm + Ne$  collisions*, Phys. Rev. A **61**, 012705.

55. O. J. Kroneisen, H. J. Lüdde, T. Kirchner, and R. M. Dreizler 1999, *The basis generator method: optimized dynamical representation of the solution of time-dependent quantum problems*, J. Phys. A: Math. Gen. **32**, 2141.
56. D. Elizaga, L. F. Errea, J. D. Gorfinkiel, C. Illescas, L. Méndez, A. Riera, A. Rojas, A. Macías, O. J. Kroneisen, T. Kirchner, H. J. Lüdde, A. Henne, and R. M. Dreizler 1999, *Theoretical analysis of electron capture and electron-loss in  $Be^{4+} + H_2$  and  $H^+ + H_2$  collisions*, J. Phys. B: At. Mol. Opt. Phys. **32**, 857.
57. T. Kirchner, L. Gulyás, H. J. Lüdde, E. Engel, and R. M. Dreizler 1998, *Influence of electronic exchange on single and multiple processes in collisions between bare ions and noble-gas atoms*, Phys. Rev. A **58**, 2063.
58. T. Kirchner, L. Gulyás, H. J. Lüdde, A. Henne, E. Engel, and R. M. Dreizler 1997, *Electronic exchange effects in  $p + Ne$  and  $p + Ar$  collisions*, Phys. Rev Lett. **79**, 1658.
59. H. J. Lüdde, A. Henne, T. Kirchner, and R. M. Dreizler 1996, *Optimized dynamical representation of the solution of time-dependent quantum problems*, J. Phys. B: At. Mol. Opt. Phys. **29**, 4423.

Papers in Conference Proceedings (invited and/or refereed)

60. M. Zapukhlyak, N. Henkel, and T. Kirchner 2010, *Projectile scattering and electron-electron interaction in ion-atom collisions*, J. Phys.: Conference Series **212**, 012030 (cf. 5.8).
61. M. Schulz, R. Moshhammer, D. Fischer, M. Dürr, J. Ullrich, A. Hasan, M. F. Ciappina, and T. Kirchner 2009, *Current status of kinematically complete studies of basic fragmentation processes in atomic systems*, Nucl. Instr. and Meth. in Phys. Res. B. **267**, 187.
62. M. Keim, A. Achenbach, H. J. Lüdde, and T. Kirchner 2005, *Time-dependent density functional theory calculations for collisions of bare ions with helium*, Nucl. Instr. and Meth. in Phys. Res. B. **233**, 240 (cf. 6.38).
63. T. Kirchner 2005, *Pauli blocking and laser manipulation of the electron dynamics in atomic collisions*, Nucl. Instr. and Meth. in Phys. Res. B. **233**, 151 (cf. 5.28).
64. T. Kirchner, H. J. Lüdde, and M. Horbatsch 2004, *Nonperturbative study of the rearrangement dynamics in ion-atom collisions with active electrons on projectile and target*, Physica Scripta **T110**, 364 (Proceedings of the *XXIII. International Conference on Photonic, Electronic, and Atomic Collisions*, cf. 5.32).
65. T. Kirchner, L. Gulyás, R. Moshhammer, M. Schulz, and J. Ullrich 2003, *Correlation effects in differential electron-emission spectra obtained from double ionization of He by fast  $Au^{53+}$  impact*, Nucl. Instr. and Meth. in Phys. Res. B **205**, 479.
66. H. J. Lüdde, T. Kirchner, and M. Horbatsch 2002, *Quantum mechanical treatment of ion collisions with many-electron atoms*, in: *Photonic, Electronic, and Atomic Collisions*, edited by J. Burgdörfer u.a. (Rinton Press, Princeton 2002), 708.

67. D. Skiera, R. Trassl, K. Huber, H. Bräuning, E. Salzborn, M. Keim, A. Achenbach, T. Kirchner, H. J. Lüdde, and R. M. Dreizler 2001, *Charge-changing processes in collisions between Li-like ions and He<sup>2+</sup>*, Physica Scripta **T92**, 423.
68. T. Kirchner and L. Gulyás 2001, *Differential net- and multiple-ionization cross sections in fast highly-charged ion collisions with atoms*, Physica Scripta **T92**, 348 (cf. 6.61).
69. T. Kirchner, H. J. Lüdde, and R. M. Dreizler 1999, *Many electron dynamics in collisions between highly charged ions and neon atoms*, Physica Scripta **T80**, 416 (cf. 6.66).
70. T. Kirchner, M. Keim, A. Achenbach, H. J. Lüdde, O. J. Kroneisen, and R. M. Dreizler 1999, *Basis generator method study of collisions between alpha particles and lithium-like ions*, Physica Scripta **T80**, 270 (cf. 6.67).
71. T. Kirchner, H. J. Lüdde, O. J. Kroneisen, and R. M. Dreizler 1999, *New trends in the description of ion-atom collisions by time-dependent quantum methods*, Nucl. Instr. and Meth. in Phys. Res. B **154**, 46 (cf. 5.45).

### 3. Funding

Title (Role)	Institution	Amount	Duration
Collision- and laser-induced quantum dynamics of atomic and molecular systems (Discovery Grant, PI)	Natural Sciences and Engineering Research Council of Canada	\$ 205,000	5 years since 04/09
Computing cluster for calculations on collision- and laser-induced quantum dynamics of atomic and molecular systems (RTI Grant, PI)	Natural Sciences and Engineering Research Council of Canada	c. \$ 24,000	04/09–03/11
Nonperturbative, quantum-mechanical description of charge-changing processes in fast heavy-particle collisions from gas targets (PI)	Federal Ministry for Education and Research (Germany)	c. 95000 EUR	09/06–06/09
Theory of laser-assisted and laser-induced processes in few-electron atomic and molecular systems (PI)	German Research Foundation (DFG)	c. 234000 EUR	10/05–11/08
Nonperturbative description of the electron dynamics of atomic systems in laser- and ion-generated time-dependent fields (PI)	German Research Foundation (DFG)	c. 79000 EUR	10/03–09/06

## C. Teaching

### 1. Courses taught at York University (since 2009)

Winter 2012	<i>Atomic and Molecular Physics</i> (PHYS 4011 3.0/5050)
Winter 2012	<i>Classical Mechanics</i> (PHYS 3010 3.0)
Fall 2011	<i>Physical Science</i> (PHYS 1410 6.0)
Winter 2011	<i>Atomic and Molecular Physics</i> (PHYS 4011 3.0/5050)
Winter 2011	<i>Classical Mechanics</i> (PHYS 3010 3.0)
Summer 2010	<i>Physical Science</i> (PHYS 1410 6.0)
Winter 2010	<i>Atomic and Molecular Physics</i> (PHYS 4011 3.0/5050)
Winter 2010	<i>Classical Mechanics</i> (PHYS 3010 3.0)
Fall 2009	Tutorials in <i>Physical Science</i> (PHYS 1419)

### 2. Courses taught at Clausthal University of Technology (2003–2009)

Winter 2008/2009	<i>Theoretical Physics I: Classical Mechanics</i>
Summer 2008	<i>Theoretical Physics II: Classical Electrodynamics</i>
Summer 2007	<i>Theoretical Physics II: Classical Electrodynamics</i>
Winter 2006/2007	<i>Theoretical Physics III: Quantum Mechanics</i>
Summer 2006	<i>Quantum Theory of the Chemical Bond</i>
Winter 2005/2006	<i>Theoretical Physics I: Classical Mechanics</i>
Summer 2005	<i>Dynamics and Interactions of Elementary Quantum Systems</i>
Winter 2004/2005	<i>Theoretical Physics III: Quantum Mechanics</i>
Summer 2004	<i>Electronic Structure of Molecules</i>
Winter 2003/2004	<i>Theoretical Physics III: Quantum Mechanics</i>
Summer 2003	<i>Dynamics and Interactions of Elementary Quantum Systems</i>

### 3. Supervision

- Postdoctoral supervision: two completed
- Ph.D. student supervision: one in progress and one completed
- M.Sc. student supervision: two in progress and nine completed (in Germany)



#### D. Service (selected activities)

- Organizer of the Departmental Colloquium of the Department of Physics and Astronomy at York University (since 2010)
- Member of the Committee on Admissions and Recruitment of the Faculty of Sciences and Engineering at York University (since 2009)
- "Friend of" the Canadian Association of Physicists (CAP) (since 2012)
- Member of a selection panel of the Ontario Graduate Scholarship (OGS) Program (2010)
- Treasurer of the *Gaseous Electronics Conference* (GEC) (since 2010)
- Member of the Scientific Committee of the *International Symposium on (e,2e), Double Photoionization and Related Topics* (since 2009)
- Member of the International Advisory Committee of the *International Symposium on Ion-Atom Collisions* (ISIAC) (since 2009)
- Member of the General Committee of the *International Conference on Photonic, Electronic, and Atomic Collisions* (ICPEAC) (2005-2009)
- Co-chair of the 20th *International Symposium on Ion-Atom Collisions* (XX ISIAC), Crete (2007)
- Co-organizer of the 329th Wilhelm und Else Heraeus Seminar *Manipulation of Few-Body Quantum Dynamics*, 23.-26.6.2004, Bad Honnef, Germany ([www2.pt.tu-clausthal.de/qd/heraeus/index.htm](http://www2.pt.tu-clausthal.de/qd/heraeus/index.htm))
- Reviewer for the National Science Foundation (NSF), USA (2012)
- Reviewer for the Alexander von Humboldt Foundation, Germany (2008, 2011, 2012)
- Reviewer for the German Research Foundation (DFG), Germany (2008, 2011)
- Reviewer for the Department of Energy (DOE), USA (2004, 2007, 2010)
- Referee for *European Journal of Physics D*, *Few-Body Systems*, *Journal of Atomic, Molecular, and Optical Physics*, *Journal of Physics B*, *Nuclear Instruments and Methods B*, *Physical Review A und Letters*, *Physics Letters A*, *Physics Research International*, *PhysMath Central (PMC) Physics B*
- Member of the American Physical Society (APS) (since 2011)
- Member of the Canadian Association of Physicists (CAP) (since 2010)
- Member of the German Physical Society (DPG) (since kindergarten)

Toronto, Ontario, August 1, 2012