

*Curriculum Vitae: (November 2015)***Klaus R.W. Bartschat**

Department of Physics and Astronomy
 Drake University
 Des Moines, Iowa 50311, USA
 phone: +1-515-271-3750
 fax: +1-515-271-1943
 e-mail: klaus.bartschat@drake.edu
 www: <http://bartschat.wordpress.drake.edu/>

**Personal Data**

Date and Place of Birth: June 17, 1956 in Burgsteinfurt (now Steinfurt), Germany
 Nationality: US Citizen (naturalized in 2002)
 Family Status: Married to Teresa E. Bartschat; two children (Nicholas Ian Richard, Erika Elisabeth)

Education

June 1989: *Habilitation and Venia Legendi for Physics*
 (Special German degree based on self-directed research)
 Westfälische-Wilhelms-Universität Münster (Germany)
 Thesis: *Excitation and Ionization of Atoms by Interaction with Electrons, Positrons, Protons, and Photons*
 June 1984: *Ph.D. (Dr. rer. nat.), Theoretical Atomic Physics*
 Westfälische-Wilhelms-Universität Münster (Germany)
 Thesis: *Spindependent Effects in Low-Energy Electron Scattering from Heavy Atoms*
 (Advisor: Prof. Dr. K. Blum)
 September 1981: *Diploma (Master degree), Experimental Atomic Physics*
 Westfälische-Wilhelms-Universität Münster (Germany)
 Thesis: *Excitation of Atoms by Spin-Polarized Electrons with Subsequent Observation of the Emitted Radiation*
 (Advisor: Prof. Dr. J. Keßler)

Professional Experience**Present Position:**

Ellis & Nelle Levitt Distinguished Professor of Physics
Department of Physics and Astronomy
Drake University
Des Moines, Iowa 50311, USA

Previous Positions:

Sept. 1994–August 2000: Professor of Physics
 Department of Physics and Astronomy, Drake University, Des Moines (Iowa, USA)
 Sept. 1992–August 1994: Associate Professor of Physics
 Department of Physics and Astronomy, Drake University, Des Moines (Iowa, USA)
 Sept. 1992–June 1993: Visiting Fellow
 Joint Institute for Laboratory Astrophysics, University of Colorado, Boulder (Colorado, USA)
 Sept. 1988–August 1991: Assistant Professor of Physics
 Department of Physics and Astronomy, Drake University, Des Moines (Iowa, USA)
 Jan. 1986–August 1988: Research Associate
 Institut für Theoretische Physik I, Westfälische Wilhelms-Universität Münster (Germany)
 Jan. 1987–May 1987: Visiting Assistant Professor
 Department of Physics and Astronomy, Drake University, Des Moines (Iowa, USA)

Oct. 1984–Dec. 1985:	Research Associate Dept. of Appl. Math., The Queen’s University of Belfast (Northern Ireland)
Febr. 1983–Sept. 1984:	Research Assistant Institut für Theoretische Physik I, Westfälische Wilhelms-Universität Münster (Germany)
Oct. 1981–Jan. 1983:	Postgraduate Tutor Institut für Theoretische Physik I, Westfälische Wilhelms-Universität Münster (Germany)
Sept. 1980–Sept. 1981:	Student Tutor Institut für Theoretische Physik I, Westfälische Wilhelms-Universität Münster (Germany)

Visiting/Adjunct Appointments:

The Queen’s University of Belfast (Northern Ireland):	October 1982–December 1982 October 1983–December 1983 October 1984–December 1985 November 1987–December 1987 September 1995–November 1995 (Visiting Fellow) July 1996 (Visiting Fellow)
Drake University Des Moines (Iowa, USA):	January 1986–March 1986 January 1987–May 1987
York University Toronto (Canada):	May 1987–July 1987 September 1987–October 1987 January 1988–March 1988 May 1988–June 1988
University of Münster (Germany):	May 1989–July 1989 June 1990–August 1990 May 1991–June 1991 June 1992–August 1992 July 1993–August 1993 May 1994–June 1994 December 1995 (Visiting Fellow) June 2003–August 2003 (Mercator Professor)
Joint Institute for Laboratory Astrophysics (Boulder, Colorado, USA):	September 1992–June 1993 (Visiting Fellow)
The Flinders University of South Australia (Adelaide, Australia):	January 1996–May 1996 (Visiting Fellow)
Harvard Smithsonian Center for Astrophysics (Cambridge, Massachusetts):	June 2002–December 2002 (Visiting Fellow)
Curtin University of Technology (Perth, Australia):	January 2010–May 2010 (Adjunct Professor of Physics)
Griffith University (Brisbane, Australia):	January 2012–present (Adjunct Professor of Physics)

Honors/Awards

British Council Fellow	Oct. 1982–Dec. 1982
British Council Fellow	Oct. 1983–Dec. 1983
Fellow of the German Research Council	Oct. 1984–Dec. 1985
Stalnaker Lecturer	Drake University, 1992
Visiting Fellow, University of Colorado and JILA	Sept. 1992–June 1993
Centennial Scholar (College of Arts & Sciences)	Drake University, 1993-1994
Visiting Fellow, ITAMP, Harvard Smithsonian CfA	June 2002–December 2002
Mercator Professor, German Research Council	June 2003–August 2003
Fellow of the American Physical Society	since 1998
listed in <i>Who’s Who in America</i>	since 2002
listed in <i>Who’s Who in the World</i>	since 2004
Outstanding Referee, Journals of the APS	since 2008
Troyer Research Fellow	Drake University, 2011-2012
Foundation Speaker	Gaseous Electronics Conference, 2012
Will Allis Prize	American Physical Society, 2016

Professional Activities

- Main fields of research:** Computational Physics
 Electron and Positron Collisions with Atoms and Ions
 Photoionization, including Strong-Field Processes in Atoms and Molecules
 General Scattering Theory
- Further fields:** Atomic Structure
 Heavy-Particle Collisions
 Mathematical Physics
- Publications:** 2 books
 50 further book contributions
 12 invited review articles
 2 major technical reports
 333 refereed papers in professional journals
 62 invited talks at international conferences
 105 colloquia, seminars, and guest lectures
 several hundred contributed papers at various national and international conferences
 (not listed individually)
 h-index (Google Scholar, Jan. 15, 2016): **40**; citations: **6737**
- Current Grant Support:** National Science Foundation
 (AMO Theory, Computational Physics, XSEDE)
- Previous Grant Support:** National Science Foundation
 National Center for Computational Sciences
 National Energy Research Scientific Computing Center
 Research Corporation
 NATO
 Minnesota Supercomputer Institute
 Drake University
- Journal Referee:** Atomic Data and Nuclear Data Tables, Australian Journal of Physics,
 Canadian Journal of Physics, European Physics Journal D,
 European Physics Letters, Hyperfine Interactions,
 Journal of Electron Spectroscopy, Journal of Physics B, Physics Letters A,
 Physical Review A, Physical Review Letters
- Guest Editor:** Canadian Journal of Physics (special issue, Nov./Dec. 1996)
- Proposal Referee:** National Science Foundation, Department of Energy, Research Corporation (USA)
 Member of several review panels for AMOP-Theory and ITR programs
 National Science and Engineering Research Council of Canada
 Member, General Physics Grant Selection Committee (1998–2000)
 Australian Research Council
 Alexander-von-Humboldt Foundation (Germany)
- External Examiner:** Several PhD theses in Australia, Canada, Germany, and Great Britain
- Consultant:** Naval Research Laboratory (2001 –), United Nations Atomic Energy Agency (1996–)
- Affiliations:** American Physical Society (Fellow)
 Deutsche Physikalische Gesellschaft

Professional Leadership:

Chair, Theoretical Atomic, Molecular, and Optical Community (TAMOC), 1998–2000
General Committee of the International Conference on Photonic, Electronic,
and Atomic Collisions (ICPEAC), 1991–1995
Executive Committee of the International Conference on Photonic, Electronic,
and Atomic Collisions (ICPEAC), 1993–1995; 1999–2001; 2015–2017
International Advisory Committee for the Symposium on Correlation,
Polarization and (e,2e)-Processes (Brisbane 1991, Beijing 1999, Buenos Aires 2005)
International Organizing Committee (Co-Chair) for the 7th Symposium on
Correlation, Polarization and (e,2e)-Processes in Vancouver (Canada, 1995)
Task Force on the Future of the International Conference on Photonic, Electronic,
and Atomic Collisions (ICPEAC), 1995–1997
Executive Committee of the Gaseous Electronics Conference (GEC), 2000–2002; 2014–2016
International Advisory Committee for the Conference on Electron and Photon Impact
Ionization and Related Topics (Louvain-la-Neuve, 2004)
Secretary of the International Conference on Photonic, Electronic, and Atomic
Collisions (ICPEAC), 2001–2007
Scientific Co-Chair, International Symposium on (e,2e), Double Photoionization
and Related Topics & 15th International Symposium on Polarization and
Correlation in Electronic and Atomic Collisions; University of Kentucky (2009)
Correspondent: Comments on Atomic, Molecular, and Optical Physics, 2006–2010
Editorial Board: Journal on Atomic, Molecular, and Optical Physics, 2008–2011
Specialist Editor (Comp. Atomic Physics): Comp. Phys. Commun., 2009–present
Treasurer of the Gaseous Electronics Conference (GEC), 2006–2010
Member, Task Force on Grand Challenge Communities and Virtual Organizations
Office of Cyber-Infrastructure, National Science Foundation, 2009–2011
Organizer (P.I.) of NSF Workshop on *Theoretical Atomic-Molecular-Optical Physics*:
Organizer of ITAMP/IAEA Workshop on *Uncertainty Assessment of Atomic and
Molecular Data* (July 2014)
Secretary (Organizer) *68th Gaseous Electronics Conference* (GEC) (Oct. 2015)
Executive Committee of the Few-Body Group of the American Physical Society, 2014–2017

Teaching Experience

Below is a list of courses that I have taught at Drake University since 1988. The level varies from courses for non-physics majors (predominantly students of biology and chemistry) to those for undergraduate physics majors of all levels. Some of the courses have also been taught at the graduate level. Furthermore, I have advised students for Honors and Masters theses, and I have been closely involved in the supervision of several PhD students in Britain and Germany. Finally, I have supervised post-doctoral researchers and other visitors at Drake University.

Course List:

- Introductory Physics I for Physics Majors (calculus based)
- Introductory Physics II for Physics Majors (calculus based)
- Introductory Physics III for Physics Majors (calculus based)
- Introductory Physics I for Science Majors (algebra based)
- Introductory Physics II for Science Majors (algebra based)
- Modern Physics
- Theoretical Mechanics
- Electromagnetic Theory
- Advanced Classical Physics
- Quantum Mechanics
- Thermodynamics and Statistical Physics
- Atomic and Molecular Physics
- Physics Seminar I, II, III
- Research Participation I, II
- First-Year Seminar: Physics for Future Presidents
- First-Year Seminar: Energy for Future Presidents

In all courses for physics majors, the teaching of computational techniques has been implemented to enhance the learning experience for the students. In most cases, the students are asked to write their own programs first before making use of advanced packages such as *Mathematica*. In this way, they will learn the details of the numerical methods — including the many potential problems that advanced packages can hide to some extent.

We have also used very advanced *Mathematica* programming in Research Participation classes to produce movies that provide a much deeper understanding of atomic collision processes than simple two-dimensional or even three-dimensional graphs. This work has been recognized by the professional community through two invitations of my undergraduate students to present their work in invited talks at international meetings — including the Centennial Meeting of the American Physical Society in Atlanta, Georgia (1999). Examples of these movies can be found via links from the website <http://bartschat.drake.edu/klaus.html>.

University Committee Service

Below is a list of committees I am currently serving or have served on at Drake University (often more than once).

University Level

President, Drake University Faculty Senate (2010–11); Vice-President (2009–10)
President, Drake University Faculty Senate (2004–5); Vice-President (2003–4)
Member, Steering Committee for University Re-Accreditation (2005–8)
Member, Faculty Senate Executive Committee and President’s Advisory Committee (1997, 2003–4)
Member, Faculty Senate (several two-year terms)
Member, Budget Committee (several 2-3 year terms, Vice Chair 2004–5, Chair 2005–6, Chair 2011–12)
Member, Sub-Committee on Mission and Integrity for University Re-Accreditation (2004–5)
Member and Chair, Admissions and Financial Aid Committee (1993–4, 2007–8)
Member, University Council for Strategic Planning (1997–9)
Member, Search Committee for Vice President of Institutional Advancement (2001)
Member, Board of Trustees Committee for Business, Finance, and Investment (2006–8)
Member, Board of Trustees Committee for Institutional Advancement (2000–2, 2004–6)
Member, Board of Trustees Committee for Academic Affairs (2004–5)
Member and Chair, Search Committee for Dean of the College of Arts & Sciences (2008–9)
Member, Task Force on Administrative Structures and Efficiency (2009)
Member and Chair, Search Committee for Vice President for Business and Finance (2011)

College Level

Member and Chair, Planning and Priorities Committee
Member, Faculty Cabinet (and Dean’s Advisory Committee)
Member, General Education Committee
Member, Curriculum Committee
Member and Chair, Sabbatical Review Committee
Member, several Promotion Committees

Department Level

Member and Chair, Department Chair Selection Committee
Member and Chair, Promotion and Tenure Committee
Member and Chair, Drake Physics Prize Committee

Grant History

Current Grants:

- National Science Foundation: *Development of a General and Effective B-Spline R-Matrix Program for Charged-Particle and Photon Collisions with Atoms, Ions, and Molecules*
currently funded with **\$ 182,172** for period July 2015 – June 2017
- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
currently funded with **\$ 270,000** for period July 2014 – June 2017
- National Science Foundation: *Development of a General, Fully Relativistic, Parallelized B-Spline R-Matrix with Pseudo-States Program for Electron and Photon Interactions with Atoms, Ions, and Molecules*
currently funded with **\$ 204,669** for period July 2012 – June 2016
- National Science Foundation: *Time-Dependent Interactions of Short, Intense Laser Pulses and Charged Particles with Atoms and Molecules*
currently funded with **8,303,280 SU** (service units) on XSEDE
July 2015–June 2016

Previous Grants:

- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
funded with **\$ 320,784** for period August 2011 – July 2015
- National Science Foundation: *Time-Dependent Interactions of Short, Intense Laser Pulses and Charged Particles with Atoms and Molecules*
currently funded with **7,866,312 SU** (service units) on XSEDE
July 2014–June 2015
- National Science Foundation: *Time-Dependent Interactions of Short, Intense Laser Pulses and Charged Particles with Atoms and Molecules*
funded with **23,488,000 SU** (service units) on XSEDE
July 2013–June 2014
- National Science Foundation: *Workshop on AMO Theory; Recent Developments and a Vision for the Future*
funded with **\$ 85,621** for period July 2011– June 2014
- National Science Foundation: *Development of a general, fully relativistic B-Spline R-Matrix with pseudo-states program for electron and photon interactions with atoms, ions, and molecules*
funded with **\$ 196,764** for period September 2009 – August 2013
- National Science Foundation: *Time-Dependent Interactions of Short, Intense Laser Pulses and Charged Particles with Atoms and Molecules*
funded with **16,098,369 SU** (service units) on XSEDE
April 2012–June 2013
- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
funded with **\$ 299,900** for period June 2008–May 2011
- National Science Foundation: *Time-Dependent Interactions of Short, Intense Laser Pulses and Charged Particles with Atoms and Molecules*
funded with **18,000,000 SU** (service units) on TeraGrid
January 2011–March 2012
- National Science Foundation: *Time-Dependent Interactions of Short, Intense Laser Pulses and Charged Particles with Atoms, Molecules, and Bose-Einstein Condensates*
funded with **10,500,000 SU** (service units) on TeraGrid
October 2009–December 2010
- National Science Foundation: *Development of a general and effective program B-spline R-matrix program for electron and photon collisions with atoms, ions, and molecules*
funded with **\$ 290,200** for period June 2006–May 2010
- National Center for Computational Sciences: *Time-Dependent Interactions of Short, Intense Laser Pulses and Charged Particles with Atoms and Molecules*
funded with **2,000,000 SU** at ORNL, January 2010–December 2010

Previous Grants (continued):

- National Science Foundation: *Support for US-based Scientists to Attend Quantum Dynamics Imaging Workshop; Montreal, Canada; October 19-23, 2009*
funded with **\$ 19,040** for period September 2009–August 2010
- National Science Foundation: *Computational Studies of the Interaction of Time-Dependent Electromagnetic Fields with Atoms, Molecules and Bose Condensates*
funded with **2,200,000 SU** on Teragrid, October 2008–September 2009
- Department of Energy and National Energy Research Scientific Computer Center: *High-precision calculations for electron and photon interactions with atoms and ions*
funded with **50,000 SU** on Franklin, Oct. 2008–Sept. 2009
- National Science Foundation: *Benchmark calculations for atomic continuum processes*
funded with **100,000 SU** on Ranger (TACC), May 2008–April 2009
- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
funded with **\$ 450,000** for period June 2003–May 2008
- National Science Foundation: *Development of a general and effective program for electron collisions with atoms and ions using a B-spline approach with non-orthogonal orbitals*
funded with **\$ 240,000** for period October 2003–September 2006
- National Science Foundation: *Student Support for GEC 2007*
currently funded with **\$ 5,000** for period July 2007–June 2008
- National Science Foundation: *XXIVth ICPEAC Group Travel Grant for Young Scientists*
funded with **\$ 7,500** for period June 2005–May 2006
- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
funded with **\$ 259,916** for period June 2000–May 2003
- Department of Energy and National Energy Research Scientific Computer Center: *Terascale Computational Atomic Physics for the Edge Region in Controlled Fusion Plasmas; member of the SCIDAC team*
- National Energy Research Scientific Computer Center: *R-matrix with pseudostates calculations for electron collisions with atoms and ions*
funded with **5,000 MPP hours** for period Oct. 2000–March 2002
- National Science Foundation: *XXIIInd ICPEAC Group Travel Grant for Young Scientists*
funded with **\$ 5,000** for period March 2001–February 2002
- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
funded with **\$ 209,730** for period June 1997–May 2000
- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
funded with **\$ 165,604** for period January 1994–June 1997
- National Science Foundation: *Excitation and Ionization in Atomic Collision Processes — General Theory and Accurate Numerical Calculations*
funded with **\$ 97,377** for period January 1991–June 1994
- National Science Foundation: *XVIIIth ICPEAC International Travel Grant (with G.H. Dunn)*
funded with **\$ 8,000** for period May 1993–April 1994
- NATO: *Calculations of Atomic Data Using High-Performance Computing Platforms*
funded with **Bfr 300,000** for period September 2000–August 2004
- NATO: *Electron Scattering from Atoms and Molecules (with P.G. Burke and K. Blum)*
funded with **\$ 8,000** for period July 1990–June 1992
- NATO: *Electron Scattering from Atoms and Molecules (with P.G. Burke and K. Blum)*
funded with **\$ 9,000** for period April 1993–March 1996
- Research Corporation: *Excitation and Ionization of Atoms by Interaction with Electrons, Positrons, Protons and Photons*
funded with **\$ 13,000** for period July 1989–June 1994
- Drake University: *Differential Cross Sections for Positron-Alkali Scattering*
funded with **\$ 1,000** for period January 1993–April 1993
- Minnesota Supercomputer Institute: *R-Matrix Calculations for Photo- and Particle Impact Ionization*
funded with **200 CPU hours** for period October 1989–June 1992
- Drake University: *Computational Physics: Program Development and Applications*
funded with **\$ 1,000** for period December 1988–May 1990

Scientific Publications

Books

1. *Computational Atomic Physics — Electron and Positron Scattering from Atoms and Ions*
K. Bartschat (Ed.), Springer (1996) with the following contributions:
 - (a) *Scattering Theory: An Overview*
 - (b) *Core potentials in atomic structure calculations*
 - (c) *The Distorted Wave Method for Elastic Scattering and Atomic Excitation* (with D.H. Madison)
 - (d) *Scattering Amplitudes*
 - (e) *Density Matrices: Connection between Theory and Experiment*
2. *Polarization, Alignment, and Orientation in Atomic Collisions*
N. Andersen and K. Bartschat, Springer (2001)

Book Contributions

1. *A test of the influence of the nuclear spin in electron impact excitation processes*
K. Bartschat, K. Blum, P.G. Burke and N.S. Scott in: *Fundamental Processes in Atomic Collision Physics*
H. Kleinpoppen, J.S. Briggs, and H.O. Lutz (Eds.), Plenum Press, New York and London (1985).
2. *Electron scattering from heavy atoms*
K. Bartschat and P.G. Burke in: *Coherence in Atomic Collision Physics*, J. Beyer, K. Blum, and R. Hippler (Eds.), Plenum Press, New York (1988).
3. *Excitation and ionization of atoms—what we can learn by using polarized collision partners*
K. Bartschat in: *Proceedings of the International Symposium on Correlation and Polarization in Electronic and Atomic Collisions*, P.A. Neill, K.H. Becker, and M.H. Kelley (Eds.), NIST Special Publication **789** (1990).
4. *Theoretical calculations of positron collisions with atoms*
A.D. Stauffer, K. Bartschat, R.I. Campeanu, M. Horbatsch, R.P. McEachran, L.A. Parcell, and S.J. Ward in: *The Physics of Electronic and Atomic Collisions*, A. Dalgarno, R.S. Freund, P.M. Koch, M.S. Lubell, and T.B. Lucatorco (Eds.), AIP Conference Proceedings **205**, New York (1990).
5. *Positron scattering from alkalis and noble gases — suggestions for testing theoretical predictions*
K. Bartschat, R.P. McEachran, and A.D. Stauffer in: *Hyperfine Interactions* **73** (1992) 99.
6. *Recent developments in the theoretical treatment of spin-dependent electron–atom scattering*
K. Bartschat in: *Correlations and Polarization in Electronic and Atomic Collisions and (e,2e) Reactions*, P.J.O. Teubner and E. Weigold (Eds.), IOP Conference Series #**122** (1992) 97.
7. *Recent progress in electron-atom close-coupling theory*
K. Bartschat in: *The Physics of Electronic and Atomic Collisions — Book of Invited Papers XVIII ICPEAC*, T. Andersen, B. Fastrup, F. Folkmann, H. Knudsen, and N. Andersen (Eds.), American Institute of Physics (1994) 251.
8. *The R-matrix method for electron impact ionization*
K. Bartschat and P.G. Burke in: *Atomic and molecular processes: an R-matrix approach*, P.G. Burke and K.A. Berrington (Eds.), Institute of Physics Publishing (London) (1993) 363; reprinted from *Journal of Physics B* **20** (1987) 3191.
9. *Differential cross sections for elastic and inelastic positron scattering from alkali atoms*
K. Bartschat, K.M. DeVries, R.P. McEachran, and A.D. Stauffer in: *Positron Interactions with Atoms, Molecules, and Clusters*, W. Raith and R.P. McEachran (Eds.), J.C. Baltzer AG (Basel, 1994); reprinted from *Hyperfine Interactions* **89** (1994).
10. *Density matrices*
K. Bartschat in: *Atomic, Molecular, & Optical Physics Handbook*, G.W. Drake (Ed.), American Institute of Physics (1996) 94.
11. *A modern theory of atomic line radiation*
K. Bartschat in: *Selected Topics in Electron Physics*, H. Kleinpoppen and M.C. Campbell (Eds.), Plenum Press, New York (1996) 141.

12. *Excitation of atoms by electron impact: Current status and future prospects*
K. Bartschat in: *Photon and Electron Collisions with Atoms and Molecules*, P.G. Burke and C.J. Joachain (Eds.), Plenum Press, New York (1997) 1.
13. *Intermediate energy R-matrix theory*
M.P. Scott, P.G. Burke, and K. Bartschat in: *Photonic, Electronic, and Atomic Collisions — Book of Invited Papers XX ICPEAC*, H. Winter and F. Aumayr (Eds.), World Scientific (1998) 229.
14. *Recent developments in the theory of electron–ion collisions*
K. Bartschat in: *Atomic Processes in Plasmas*, E. Oaks and M.S. Pindzola (Eds.), American Institute of Physics (1998) 121.
15. *Polarization, alignment, and orientation in electron–atom collisions: benchmarks for atomic collision theory*
K. Bartschat in: *Atomic Physics* **16**, G.W.F. Drake (Ed.), American Institute of Physics (1999) 254.
16. *Ionization plus excitation in electron–atom collisions*
K. Bartschat in: *Proceedings of the International Conference on Coincidence Spectroscopy*, O. Robaux and A. Pochat (Eds.), J. Phys. IV (France) (1999), Pr 6-17.
17. *Benchmark studies in electron-impact excitation of atoms*
K. Bartschat in: *Supercomputing, collision processes, and applications*, K.L. Bell, K.A. Berrington, D.S.F. Crothers, A. Hibbert, and K.T. Taylor (Eds.), Plenum Press, New York (1999), 33.
18. *Complete experiments in electron–atom collisions: benchmarks for atomic collision theory*
K. Bartschat in: *Electron Scattering — Photon Impact — EPR-Experiments*, U. Becker and A. Crowe (Eds.), Plenum Press, New York (2001).
19. *Non-statistical magnetic substate populations following excitation of helium by electron and proton impact*
J. Hanni, H. Merabet, A. Siems, R. Bruch, M. Bailey, D.V. Fursa, I. Bray, K. Bartschat, H.C. Tseng, C.D. Lin, and A.G. Trigueiros in: *Application of Accelerators in Research and Industry*, J.L. Duggan and I.L. Morgan (Eds.), AIP Press, New York (2001).
20. *Excitation cross sections of $(1s np)^1P^o$ ($n = 2 - 5$) levels of helium by fast electron, proton, and molecular hydrogen (H_2^+ and H_3^+) impact*
H. Merabet, M. Bailey, R. Bruch, J. Hanni, S. Bliman, D.V. Fursa, I. Bray, K. Bartschat, H.C. Tseng, and C.D. Lin in: *Application of Accelerators in Research and Industry*, J.L. Duggan and I.L. Morgan (Eds.), AIP Press, New York (2001).
21. *Spectro-polarimetric measurements of the EUV emission from helium following e^- , H^+ , H_2^+ , and H_3^+ charged-particle impact*
H. Merabet, R. Bruch, M. Bailey, J. Hanni, S. Fineschi, A. Godunov, J. H. McGuire, I. Bray, K. Bartschat, H. C. Tseng, and C. D. Lin in: *SPIE Proceedings on UV/EUV and Visible Space Instrumentation for Astronomy and Solar Physics*, M.A. Gummin, O.H.W. Siegmund, and S. Fineschi (Eds.) (2001)
22. *Simultaneous ionization–excitation: a challenge for theory and experiment*
K. Bartschat in: *Correlations, Polarization, and Ionization in Atomic Systems*, D.H. Madison and M. Schulz (Eds.), AIP Conference Proceedings #**604**, American Institute of Physics (2002).
23. *Polarization measurements of the extreme ultraviolet (EUV) emission following excitation and ionization–excitation by fast electron, proton, and molecular hydrogen (H_2^+ and H_3^+) impact*
H. Merabet, R. Bruch, S. Fülling, K. Bartschat, A. Godunov, J. H. McGuire, and A.N. Grum-Grzhimailo: *SPIE Proceedings* (2002)
24. *Ionization–excitation magnetic sublevel cross sections for $He^+(2p)^2P^o$ states following fast electron and proton impact*
H. Merabet, R. Bruch, S. Fülling, M. Bailey, A. Godunov, J. H. McGuire, A.N. Grum-Grzhimailo, and K. Bartschat in: *Proceedings of the International Conference on Highly Charged Ions* (2002)
25. *Benchmark calculations for electron collisions with complex atoms*
K. Bartschat in: *Atomic and Molecular Data and Their Applications*, D.R. Schultz, P.R. Krstic, and F. Owbny (Eds.), AIP Conference Proceedings #**636**, American Institute of Physics (2002)
26. *Recent progress in the simultaneous ionization–excitation of quasi-two-electron systems*
K. Bartschat in: *Electron and Photon Impact Ionization and Related Topics*, U. Ancarani (Ed.), IOP Conference Proceedings #**172**, Institute of Physics (2003)

27. *Various problems in electron–atom collision theory*
I. Bray, K. Bartschat, D.V. Fursa, A.S. Kadyrov, and A.T. Stelbovics in: *Correlations, Polarization, and Ionization in Atomic Systems*, G.F. Hanne, L. Malegat, and H. Schmidt-Böcking (Eds.), AIP Conference Proceedings #**697**, American Institute of Physics (2003) 193.
28. *Studies of spin-polarized electron scattering from rubidium*
M. R. Went, M. L. Daniell, W. E. Guinea, K. Bartschat, B. Lohmann, and W. R. MacGillivray in: *Correlations, Polarization, and Ionization in Atomic Systems*, G.F. Hanne, L. Malegat, and H. Schmidt-Böcking (Eds.), AIP Conference Proceedings #**697**, American Institute of Physics (2003) 205.
29. *Simultaneous Ionization–Excitation: (e,γ) , $(e,2e)$, $(e,e\gamma)$ and $(e,2e\gamma)$*
K. Bartschat in: *Correlations, Polarization, and Ionization in Atomic Systems*, G.F. Hanne, L. Malegat, and H. Schmidt-Böcking (Eds.), AIP Conference Proceedings #**697**, American Institute of Physics (2003) 213.
30. *Box-based convergent close-coupling calculations of electron-hydrogen ionisation cross sections*
I. Bray, K. Bartschat and A.T. Stelbovics in: *Photonic, Electronic and Atomic Collisions — Book of Invited Papers XXIII ICPEAC*, R. Schuch, H. Cederquist, M. Larsson, and E. Lindroth (Eds.), Physica Scripta T**100** (2004) 200.
31. *A hybrid DWBA–R-matrix approach for charged-particle impact ionization of atoms and ions*
K. Bartschat in: *Correlations, Polarization, and Ionization in Atomic Systems*, A. Lahmam-Bennani, B. Lohmann, and J. Miraglia (Eds.), AIP Conference Proceedings #**811**, American Institute of Physics (2006) 203.
32. *Density matrices*
K. Bartschat in: *Handbook of Atomic, Molecular, and Optical Physics*, G.W.F. Drake (Ed.), Springer (2006) 94.
33. *The B-spline R-matrix method for electronic and photonic collisions*
O. Zatsarinny and K. Bartschat in: *Photonic, Electronic and Atomic Collisions — Book of Invited Papers XXIV ICPEAC*, P.D. Fainstein, M.A.P. Lima, J.E. Miraglia, E.C. Montenegro, and R.D. Rivarola, (Eds.), World Scientific (2006) 253.
34. *Absolute angle-differential cross sections for excitation of neon atoms by electrons of energy 16.6–19.2 eV*
M. Allan, K. Franz, H. Hotop, O. Zatsarinny, and K. Bartschat in: *Photonic, Electronic and Atomic Collisions — Book of Invited Papers XXIV ICPEAC*, P.D. Fainstein, M.A.P. Lima, J.E. Miraglia, E.C. Montenegro, and R.D. Rivarola (Eds.), World Scientific (2006) 261.
35. *Simultaneous ionization-excitation to the $He^+ 2^2P$ state by electron impact: an $(e,2e\gamma)$ experiment*
A. Dorn, G. Sakelashvili, C. Höhr, J. Ullrich, A. Kheifets, J. Lower, and K. Bartschat in: *Photonic, Electronic and Atomic Collisions — Book of Invited Papers XXIV ICPEAC*, P.D. Fainstein, M.A.P. Lima, J.E. Miraglia, E.C. Montenegro, and R.D. Rivarola (Eds.), World Scientific (2006) 364.
36. *High-precision cross sections for low-energy electron–atom collisions*
K. Bartschat and O. Zatsarinny in: *Atomic and Molecular Data and Their Applications*, AIP Conference Proceedings #901, American Institute of Physics (2007) 117.
37. *Integrated Analysis of Spectroscopic Data*,
D. Dodt, A. Dinklage, R. Fischer, K. Bartschat, O. Zatsarinny in: *Proceedings of ITC/ISHW2007* (2008) 84.
38. *Form-free reconstruction of an electron energy distribution function from optical emission spectroscopy*
D. Dodt, A. Dinklage, R. Fischer, K. Bartschat and O. Zatsarinny in: *Plasma 2007 — International Conference in Research and Applications of Plasmas*, AIP Conference Proceedings #993, American Institute of Physics (2008) 203.
39. *Charged-Particle Impact Ionization of Atoms*
K. Bartschat and X. Guan in: *Cold Antimatter Plasmas and Application to Fundamental Physics*, Y. Kanai and Y. Yamazaki (Eds.)
AIP Conference Proceedings #1037, American Institute of Physics (2008) 115.
40. *Recent out-of-plane $(e,2e)$ experiments on autoionizing levels of helium*
B.A. deHarak, K. Bartschat, and N.L.S. Martin, J. Phys.: Conf. Ser. **141** (2008) 012005
41. *Electron-impact ionization-excitation of atoms*
K. Bartschat, J. Phys.: Conf. Ser. **141** (2008) 012002.

42. *Electron-impact ionization-excitation of complex atoms*
K. Bartschat, J. Phys.: Conf. Ser. **194** (2009) 012020.
43. *Three-dimensional cross sections for electron impact ionization of atoms and molecules*
X. Ren, A. Senftleben, T. Pflüger, M. Holzwarth, A. Dorn, K. Bartschat, I. Bray, D.V. Fursa, J. Colgan, M.S. Pindzola, O. Al-Hagan, D.H. Madison, and J. Ullrich, J. Phys.: Conf. Ser. **212** (2010) 012003.
44. *Few-cycle intense laser interactions with complex atoms*
X. Guan and K. Bartschat, J. Phys.: Conf. Ser. **212** (2010) 012023.
45. *Multi-photon single and double ionization of complex atoms by ultrashort intense laser pulses*
K. Bartschat, X. Guan, C.J. Noble, B.I. Schneider, and O. Zatsarinny in: *Quantum Dynamic Imaging*, A.D. Bandrauk and M. Ivanov (Eds.), Springer (2011)
46. *Electron scattering from krypton: High-resolution experiments and B-spline R-matrix calculations*
O. Zatsarinny, K. Bartschat, and M. Allan, J. Phys.: Conf. Ser. **388** (2012) 012008.
47. *Effects of autoionizing states on two-photon double ionization of the H₂ molecule*
X. Guan, K. Bartschat, B.I. Schneider, and L. Koesterke, J. Phys.: Conf. Ser. **488** (2014) 012024.
48. *Benchmark calculations for electron collisions with complex atoms*
O. Zatsarinny and K. Bartschat, J. Phys.: Conf. Ser. **488** (2014) 012044.
49. *Single and Double Ionization of Atoms and Small Molecules by Short-Pulse Intense Laser Fields*
K. Bartschat, J. Phys.: Conf. Ser. **601** (2015) 012007.
50. *Photoelectron angular distribution in bichromatic atomic ionization*
A.N. Grum-Grzhimailo, E.V. Gryzlova, E.I. Staroselskaya, S.I. Strakhova, J. Venzke, N. Douguet, and K. Bartschat, J. Phys.: Conf. Ser. **635** (2015) 012008.

Invited Review Papers

1. *Low energy scattering of electrons by heavy atoms*
K. Bartschat and P.G. Burke, *Comm. At. Mol. Phys.* **16** (1985) 271.
2. *Excitation and ionization of atoms by interaction with electrons, positrons, protons, and photons*
K. Bartschat, *Physics Reports* **180** (1989) 1.
3. *Spin dependent electron–atom scattering: recent developments and challenges for the future*
K. Bartschat, *Comm. At. Mol. Phys.* **27** (1992) 239.
4. *Can the quantum mechanical description of electron-sodium collisions be considered complete? Present status and future prospects for 3s–3p transitions.*
N. Andersen and K. Bartschat (1993), *Comm. At. Mol. Phys.* **29** (1993) 157.
5. *Electron impact excitation cross section data for helium*
K. Bartschat, I. Bray, W.C. Fon, F.J. de Heer, and R. Janev, *International Nuclear Data Committee Report INDC(NDS)-348* (1995).
6. *Spectroscopic stability of atomic line radiation*
K. Bartschat and G. Csanak, *Comm. At. Mol. Phys.* **32** (1996) 233.
7. *Complete experiments in atomic collisions*
N. Andersen and K. Bartschat, *Advances in Atomic, Molecular, and Optical Physics* **36** (1996) 1.
8. *Collisional alignment and orientation of atomic outer shells III: Spindependent effects*
N. Andersen, K. Bartschat, J.T. Broad, J.W. Gallagher, and I.V. Hertel, *Physics Reports* **279** (1997) 251.
9. *Status of database for electron collisions with beryllium and boron atoms and ions*
K. Bartschat, I. Bray, K.A. Berrington, and R. Janev, *International Nuclear Data Committee Report INDC(NDS)-369* (1997).
10. *Impact Excitation of atomic D-states: Recipes for perfect scattering experiments*
N. Andersen and K. Bartschat, *Topical Review for Journal of Physics B* **30** (1997) 5071.
11. *Electron Scattering by Atoms, Ions, and Molecules*
K. Bartschat, P.G. Burke, and A. Crowe in: *Encyclopedia of Applied Spectroscopy*, D.L. Andrews (Ed.), Wiley (2009) 209.
12. *TOPICAL REVIEW: The B-spline R-Matrix Method for Atomic Processes: Application to Atomic Structure, Electron Collisions, and Photoionization*
O. Zatsarinny and K. Bartschat, *J. Phys. B* **46** (2013) 112001

Technical Reports

1. *National Science Foundation Advisory Committee for Cyberinfrastructure: Task Force on Grand Challenges*
J.T. Oden *al.* (2011) <http://www.nsf.gov/od/oci/taskforces>
2. *Theoretical Atomic, Molecular, and Optical Physics: Recent Developments and a Vision for the Future*
K. Bartschat, D. Blume, C.M. Caves, and I. H. Deutsch, American Institute of Physics (New York, 2012)

Research Papers (refereed)

1. *Resonance features and fine-structure effect in the asymmetry of polarized electrons scattered inelastically from mercury atoms*
K. Bartschat, G.F. Hanne, A. Wolcke, and J. Kessler, *Phys. Rev. Lett.* **47** (1981) 997
2. *Electron-photon coincidences with polarised electrons*
K. Bartschat, K. Blum, G.F. Hanne, and J. Kessler, *J. Phys. B* **14** (1981) 3761
3. *Theory and physical importance of integrated state multipoles*
K. Bartschat and K. Blum, *Z. Phys. A* **304** (1982) 85.
4. *Observation of integrated state multipoles in collisional excitation of Hg atoms by polarized electrons*
K. Bartschat, G.F. Hanne, and A. Wolcke, *Z. Phys. A* **304** (1982) 89
5. *An approximate symmetry of the DWBA and consequences for coherence parameters*
K. Bartschat and K. Blum, *J. Phys. B* **15** (1982) 2747
6. *Amplitudes for scattering of electrons by atomic systems including relativistic effects*
K. Bartschat and N.S. Scott, *Comp. Phys. Commun.* **30** (1983) 369
7. *Program to calculate observable quantities from scattering amplitudes for inelastic electron-atom collisions*
K. Bartschat, *Comp. Phys. Commun.* **30** (1983) 383.
8. *Selective valence electron transfer in alkali-atom–alkali-ion collisions*
K. Bartschat, H.J. Andrä, and K. Blum, *Z. Phys. A* **314** (1983) 257
9. *Investigation of Stokes parameters for studying resonances near threshold for $6^1S_0 \rightarrow 6^3P_1$ excitation by polarised electron impact*
A. Wolcke, K. Bartschat, K. Blum, H. Borgmann, G.F. Hanne, and J. Kessler, *J. Phys. B* **16** (1983) 639
10. *The $6s6p^2$ resonances in e –Hg scattering*
N.S. Scott, P.G. Burke, and K. Bartschat, *J. Phys. B* **16** (1983) L361
11. *Calculation of Stokes' parameters for inelastic electron–mercury scattering*
K. Bartschat, N.S. Scott, K. Blum, and P.G. Burke, *J. Phys. B* **17** (1984) 269
12. *Low-energy scattering of electrons by caesium atoms*
N.S. Scott, K. Bartschat, P.G. Burke, W.B. Eissner, and O. Nagy, *J. Phys. B* **17** (1984) L191
13. *Electron-photon coincidence studies in collisions of polarized electrons with mercury atoms*
A. Wolcke, J. Goeke, G.F. Hanne, J. Kessler, W. Vollmer, K. Bartschat, and K. Blum, *Phys. Rev. Lett.* **52** (1984) 1108
14. *Calculation of Stokes' parameters for inelastic electron–caesium scattering*
O. Nagy, K. Bartschat, K. Blum, P.G. Burke, and N.S. Scott, *J. Phys. B* **17** (1984) L527
15. *Low-energy scattering of electrons by caesium atoms: II.*
N.S. Scott, K. Bartschat, P.G. Burke, O. Nagy, and W. B. Eissner, *J. Phys. B* **17** (1984) 3775
16. *Resonances in the low-energy scattering of electrons by atomic thallium*
K. Bartschat and N.S. Scott, *J. Phys. B* **17** (1984) 3787
17. *The fine-structure effect in the low-energy scattering of electrons on Hg and Tl atoms*
K. Bartschat, K. Blum, P.G. Burke, G.F. Hanne, and N.S. Scott, *J. Phys. B* **17** (1984) 3797
18. *Spin polarisation and scattering asymmetry for electron impact excitation of the $(6s6p)$ states of mercury: DWBA treatment*
K. Bartschat, D. H. Madison, and G.F. Hanne, *J. Phys. B* **18** (1985) 1847

19. *Low-energy scattering of electrons by lead atoms*
K. Bartschat, J. Phys. B **18** (1985) 2519.
20. *Photoionisation of mercury*
K. Bartschat and P. Scott, J. Phys. B **18** (1985) L191
21. *Photoelectron polarisation in the photoionisation of Hg ($6s^2$) 1S_0*
K. Bartschat and P. Scott, J. Phys. B **18** (1985) 3725
22. *RESFIT. A multichannel resonance fitting program*
K. Bartschat and P.G. Burke, Comp. Phys. Commun. **41** (1986) 75
23. *The influence of mass correction, Darwin term and short range correlation effects on the $6s6p^2$ resonances in e -Hg scattering*
K. Bartschat and P.G. Burke, J. Phys. B **19** (1986) 1231
24. *Relativistic effects in elastic scattering of electrons from heavy atoms*
K. Hasenburger, D.H. Madison, K. Bartschat, and K. Blum, J. Phys. B **19** (1986) 1803
25. *Photoionisation of barium*
K. Bartschat, M.R.H. Rudge, and Penny Scott, J. Phys. B **19** (1986) 2469
26. *Alignment and orientation parameters for proton-impact ionisation of the $2p$ and $3p$ shells of argon*
D.H. Madison and K. Bartschat, Phys. Rev. A **34** (1986) 4669
27. *Inelastic electron-mercury scattering at intermediate energies (8 eV – 50 eV)*
K. Bartschat and D.H. Madison, J. Phys. B **20** (1987) 1609
28. *The R-matrix method for electron impact ionisation*
K. Bartschat and P.G. Burke, J. Phys. B **20** (1987) 3191
29. *Photoionisation of zinc*
K. Bartschat, J. Phys. B **20** (1987) 5023.
30. *Differential cross sections for elastic electron and positron scattering from xenon atoms*
K. Hasenburger, K. Bartschat, R.P. McEachran, and A.D. Stauffer, J. Phys. B **20** (1987) 5165
31. *Electron impact excitation of rare gases: Differential cross sections and angular correlation parameters for neon, argon, krypton, and xenon*
K. Bartschat and D.H. Madison, J. Phys. B **20** (1987) 5839
32. *Angular momentum orientation in elastic electron-atom scattering*
K. Bartschat, J. Phys. B **20** (1987) L811
33. *Differential cross sections and angular correlation parameters for electron impact excitation of the 3^3P , 3^1D and 3^3D states of helium*
K. Bartschat and D.H. Madison, J. Phys. B **21** (1988) 153
34. *Scattering of Spin-1/2 particles from unpolarised targets*
K. Bartschat and D.H. Madison, J. Phys. B **21** (1988) 2621
35. *Electron impact ionisation of argon*
K. Bartschat and P.G. Burke, J. Phys. B **21** (1988) 2969
36. *Optical potential approach for electron and positron scattering from inert gases I. Argon*
K. Bartschat, R.P. McEachran, and A.D. Stauffer, J. Phys. B **21** (1988) 2789
37. *A quantitative test for spin dependent effects in electron-alkali scattering*
K. Bartschat, J. Phys. B **22** (1989) 2917
38. *Distorted wave calculations for the spin asymmetry in impact ionization of polarized atoms by polarized electrons*
K. Bartschat, J. Phys. B **23** (1990) 981
39. *Spin-orbit and interference asymmetry in elastic electron scattering from one-electron atoms*
K. Bartschat, J. Phys. B **23** (1990) 2341
40. *Optical potential approach for electron and positron scattering from inert gases II. Neon*
K. Bartschat, R.P. McEachran, and A.D. Stauffer, J. Phys. B **23** (1990) 2349
41. *Study of spin effects for electron-impact excitation of Hg (6^3P_1) at small scattering angles*
T. Simon, M. Sohn, G.F. Hanne, and K. Bartschat, J. Phys. B **23** (1990) L259

42. *Near-threshold photoionization of the $(6s6p)^1P_1$ state of barium*
K. Bartschat and B.M. McLaughlin, J. Phys. B **23** (1990) L439
43. *Electron impact ionization of chromium*
K. Bartschat, R.H.G. Reid, P.G. Burke, and H.P. Summers, J. Phys. B **23** (1990) L721
44. *Generalized STU-parameters for elastic electron scattering from thallium and lead atoms*
K. Bartschat, H.-J. Goerss, and R.-P. Nordbeck, Z. Phys. D **17** (1990) 25
45. *Effect of non-spherical distorting potentials in a first-order distorted wave calculation*
D.H. Madison, K. Bartschat, and J.L. Peacher, Phys. Rev. A **44** (1991) 304
46. *Generalized STU-parameters for inelastic electron scattering from atomic thallium*
H.-J. Goerss, R.-P. Nordbeck, and K. Bartschat, J. Phys. B **24** (1991) 2833
47. *Distorted wave calculation of elastic and inelastic scattering of electrons from cadmium*
D.H. Madison, K. Bartschat, and R. Srivastava, J. Phys. B **24** (1991) 1839
48. *Photoionization and excitation of atomic barium from the $(6s6p)^1P_1$ state*
K. Bartschat, B.M. McLaughlin, and R.A. Hoversten, J. Phys. B **24** (1991) 3359
49. *Spin dependent effects in elastic and inelastic low-energy electron scattering from sodium atoms*
K. Bartschat, J. Phys. B **24** (1991) 4615
50. *An attempt to observe Mott scattering optically*
J.E. Furst, T.J. Gay, W.M.K.P. Wijayaratna, K. Bartschat, H. Geesmann, M.A. Khakoo, and D.H. Madison, J. Phys. B **25** (1992) 1089
51. *Mott scattering and angular momentum orientation in low-energy electron scattering from indium atoms*
K. Bartschat, J. Phys. B **25** (1992) L307
52. *Electron impact ionization of $Cr(3d^54s)^7S$*
R.H.G. Reid, K. Bartschat, and P.G. Burke, J. Phys. B **25** (1992) 3175
53. *Non-statistical branching ratios for excitation of the $[np^5(n+1)s]^3,^1P_{0,1,2}$ states in noble gases*
K. Bartschat and D.H. Madison, J. Phys. B **25** (1992) 4619
54. *Second order distorted wave calculation for elastic and inelastic electron-sodium scattering*
D.H. Madison, K. Bartschat, and R.P. McEachran, J. Phys. B **25** (1992) 5199
55. *Characteristics of light emission after low-energy electron impact excitation of cesium atoms*
K. Bartschat, U. Thumm, and D.W. Norcross, J. Phys. B **25** (1992) L641
56. *Polarization of light emitted after positron impact excitation of alkali atoms*
K.M. DeVries, K. Bartschat, R.P. McEachran, and A.D. Stauffer, J. Phys. B **25** (1992) L653
57. *Core potentials for quasi one-electron systems*
B.J. Albright, K. Bartschat, and P.R. Flicek, J. Phys. B **26** (1993) 337
58. *Charge cloud distribution of heavy atoms after excitation by polarized electrons*
A. Raeker, K. Bartschat, and K. Blum, J. Phys. B **26** (1993) 1491
59. *Short range correlation and relaxation effects on the $(6p^2)^1S_0$ autoionizing state of atomic barium*
K. Bartschat and C.H. Greene, Journal of Physics B **26** (1993) L109
60. *RMATRIX-ION: A program to calculate electron and positron impact ionization within the R-matrix method*
K. Bartschat, Comp. Phys. Commun. **75** (1993) 219
61. *Relativistic effects in spin-polarization parameters for low-energy e-Cs scattering*
K. Bartschat, U. Thumm, and D.W. Norcross, J. Phys. B **26** (1993) 1587
62. *Connection between superelastic and inelastic electron-atom collisions involving polarized collision partners*
K. Bartschat and D.H. Madison, Phys. Rev. A **48** (1993) 836
63. *Low-energy electron scattering from caesium atoms — comparison between a semirelativistic Breit-Pauli and a fullrelativistic Dirac treatment*
K. Bartschat, J. Phys. B **26** (1993) 3995
64. *Sodium excitation by spin-polarized electrons: A reanalysis of existing experiments*
N. Andersen and K. Bartschat, Phys. Rev. A **49** (1994) 4232

65. *Close-coupling calculations for low-energy elastic electron scattering from thallium atoms*
K. Bartschat, Z. Phys. D **30** (1994) 85
66. *Low-energy-electron collisions with sodium: elastic and inelastic scattering from the ground state*
W.K. Trail, M.A. Morrison, H-L. Zhou, B.L. Whitten, K. Bartschat, K.B. MacAdam, T.L. Goforth, and D.W. Norcross, Phys. Rev. A **49** (1994) 3620
67. *Evidence for the $(6p^2)^3P_2$ resonance in electron scattering from cesium atoms*
K. Bartschat, A.R. Johnston, and P.D. Burrow, J. Phys. B **27** (1994) L231
68. *Ionization and simultaneous excitation of helium atoms by electron impact*
A. Raeker, K. Bartschat, and R.H.G. Reid, J. Phys. B **27** (1994) 3129
69. *Generalized Stokes parameter approach for analysis of perfect scattering experiments on impact excitation by spin polarized particles*
N. Andersen and K. Bartschat, J. Phys. B **27** (1994) 3189
70. *Differential cross sections for elastic and inelastic positron scattering from alkali atoms*
K. Bartschat, K.M. DeVries, R.P. McEachran, and A.D. Stauffer, Hyperfine Interactions **89** (1994) 57
71. *Elastic scattering from quasi one-electron targets: experimental observables vs. theoretical scattering amplitudes*
K. Bartschat and N. Andersen, Comp. Phys. Commun. **84** (1994) 335
72. *Elastic and inelastic scattering of electrons from potassium*
D.H. Madison, M. Lehmann, R.P. McEachran, and K. Bartschat, J. Phys. B **28** (1995) 105
73. *Electron spin depolarization derived from electron-photon coincidence experiments with unpolarized electrons*
N. Andersen, K. Bartschat, and G.F. Hanne, J. Phys. B **28** (1995) L29
74. *Electron scattering from laser excited chromium atoms*
K. Bartschat, J. Phys. B **28** (1995) 879.
75. *Low-energy-electron collisions with sodium: Scattering of spin-polarized electrons*
H-L. Zhou, B.L. Whitten, W.K. Trail, M.A. Morrison, K.B. MacAdam, K. Bartschat, and D.W. Norcross, Phys. Rev. A **52** (1995) 1152
76. *Near-threshold photoionization of the SrI $(5s5p)^1P_1$ state*
W. Mende, K. Bartschat, and M. Kock, J. Phys. B **28** (1995) 2385
77. *R-matrix calculations for double-differential cross sections in electron-impact ionization of helium*
R. Schwienhorst, A. Raeker, R.H.G. Reid, and K. Bartschat, J. Phys. B **28** (1995) 4651
78. *Second-order distorted wave calculation for electron-copper scattering*
D.H. Madison, J. Schroeder, K. Bartschat, and R.P. McEachran, J. Phys. B **28** (1995) 4841
79. *Spin-resolved alignment and orientation effects in atomic collisions*
K. Bartschat and N. Andersen, Austr. J. of Phys. **49** (1996) 301
80. *Electron scattering by complex atoms and ions at intermediate energies*
K. Bartschat, E.T. Hudson, M.P. Scott, P.G. Burke, and V.M. Burke, J. Phys. B **29** (1996) 115
81. *Spin-dependent orientation propensities revealed in polarized-electron-polarized-photon coincidence studies*
N. Andersen, K. Bartschat, G.F. Hanne, and M. Uhrig, Phys. Rev. Lett. **76** (1996) 208
82. *Near-threshold study of the polarization of He resonance radiation using an energy-selected electron beam*
C. Norén, J.W. McConkey, P. Hammond, and K. Bartschat, Phys. Rev. A **53** (1996) 1559
83. *Local versus non-local core potentials in electron scattering from sodium atoms*
K. Bartschat and I. Bray, J. Phys. B **29** (1996) L271
84. *Electron-photon coincidences in electron impact ionization-excitation*
R. Schwienhorst, A. Raeker, K. Bartschat, and K. Blum, J. Phys. B **29** (1996) 2305
85. *Calculation of electron-Cs scattering at intermediate energies*
K. Bartschat and I. Bray, Phys. Rev. A **54** (1996) 1723
86. *Electron impact ionization of atomic hydrogen from the 1S and 2S states*
K. Bartschat and I. Bray, J. Phys. B **29** (1996) L577
87. *Convergent R-matrix with pseudostates calculation for e-He collisions*
K. Bartschat, E.T. Hudson, M.P. Scott, P.G. Burke, and V.M. Burke, Phys. Rev. A **54** (1996) R998

88. *S-wave model for electron-hydrogen scattering*
K. Bartschat and I. Bray, Phys. Rev. A **54** (1996) R1002
89. *Complete experiments in electron impact excitation of atoms: Current status and future prospects*
N. Andersen and K. Bartschat, Can. J. of Phys. **74** (1996) 929
90. *Differential cross sections and electron impact coherence parameters for electron scattering from helium atoms*
K. Bartschat, E.T. Hudson, M.P. Scott, P.G. Burke, and V.M. Burke, J. Phys. B **29** (1996) 2875
91. *Ionization-excitation of He atoms by electron impact: Alignment of $He^+(2p)^2P$*
A. Goetz, W. Mehlhorn, A. Raeker, and K. Bartschat, J. Phys. B **29** (1996) 4699
92. *Electron impact excitation of beryllium*
K. Bartschat, P.G. Burke, and M.P. Scott, J. Phys. B **29** (1996) L769
93. *Benchmark calculations for e-H scattering between the $n=2$ and $n=3$ thresholds*
K. Bartschat, I. Bray, P.G. Burke, and M.P. Scott, J. Phys. B **29** (1996) 5493
94. *Electron scattering from helium atoms. Phase shifts, resonance parameters, and total cross sections*
E.T. Hudson, K. Bartschat, M.P. Scott, P.G. Burke, and V.M. Burke, J. Phys. B **29** (1996) 5513
95. *Electron scattering from laser-excited He 2^3P_2 atoms*
M. Jacka, M.D. Hoogerland, W. Lu, D. Milic, K.G.H. Baldwin, K. Bartschat, and S.J. Buckman, J. Phys. B **29** (1996) L825
96. *Calculation of electron impact excitation and ionization of Be^+*
K. Bartschat and I. Bray, J. Phys. B **30** (1997) L109
97. *S-wave model for e – He^+ scattering*
K. Bartschat and I. Bray, Phys. Rev. A **55** (1997) 3236
98. *Electron impact excitation of boron*
P.J. Marchalant, K. Bartschat, K.A. Berrington, and S. Nakazaki, J. Phys. B **30** (1997) L279
99. *Near-threshold electron impact ionization of hydrogen*
M.P. Scott, P.G. Burke, K. Bartschat, and I. Bray, J. Phys. B **30** (1997) L309
100. *Calculation of electron impact excitation and ionization of B^{2+}*
P.J. Marchalant, K. Bartschat, and I. Bray, J. Phys. B **30** (1997) L435
101. *Electron-collision-induced alignment of rare gases near threshold*
V. Zeman, K. Bartschat, T.J. Gay, and K.W. Trantham, Phys. Rev. Lett. **79** (1997) 1825
102. *R-matrix with pseudostates calculation for single and double ionization of helium by photon impact*
P.J. Marchalant and K. Bartschat, Phys. Rev. A **56** (1997) R1697
103. *R-matrix with pseudo-states calculations for electron impact excitation and ionization of boron*
P.J. Marchalant and K. Bartschat, J. Phys. B **30** (1997) 4373
104. *Electron-impact excitation of the $(2p^53s)$ and $(2p^53p)$ states of neon*
V. Zeman and K. Bartschat, J. Phys. B **30** (1997) 4609
105. *R-matrix with pseudo-states calculations for electron collisions with neutral beryllium*
K. Bartschat, P.G. Burke, and M.P. Scott, J. Phys. B **30** (1997) 5915
106. *Initial state and second-order effects in electron impact ionization of helium*
R.H.G. Reid, K. Bartschat, and A. Raeker, J. Phys. B **31** (1998) 563
107. *Simultaneous excitation–ionization of helium to the $He^+(2p)$ state*
M. Dogan, A. Crowe, K. Bartschat, and P.J. Marchalant, J. Phys. B **31** (1998) 1611
108. *Excitation of the $3p'[1/2]_0$ state of neon by high-resolution electron impact*
M.J. Brunger, S.J. Buckman, P.J.O. Teubner, V. Zeman, and K. Bartschat, J. Phys. B **31** (1998) L387
109. *Electron impact excitation of helium from the 1^1S and 2^3S states*
K. Bartschat, J. Phys. B **31** (1998) L469
110. *Near-threshold electron impact excitation of the VUV resonance transitions in Ne, Ar, Kr, and Xe*
V. Zeman, K. Bartschat, C. Norén, and J.W. McConkey, Phys. Rev. A **58** (1998) 1275
111. *The R-matrix with pseudo-states method: theory and applications to electron scattering and photo-ionization*
K. Bartschat, Comp. Phys. Commun. **114** (1998) 168

112. *Spin asymmetries in low-energy electron scattering from cesium atoms*
G. Baum, W. Raith, B. Roth, M. Tondera, K. Bartschat, I. Bray, S. Ait-Tahar, I.P. Grant, and P.H. Norrington, Phys. Rev. Lett. **82** (1999) 1128
113. *Electron impact excitation from the $(3p^54s)$ metastable states of argon*
K. Bartschat and V. Zeman, Phys. Rev. A **59** (1999) R2552
114. *Low-energy electron impact excitation cross sections for the $4p^55s$ levels of krypton — supplementary test of collisions models for the heavy rare gases*
X. Guo, M.A. Khakoo, D.J. Mathews, G. Mikaelian, A. Crowe, I. Kanik, S. Trajmar, V. Zeman, K. Bartschat, and C.J. Fontes, J. Phys. B **32** (1999) L155
115. *Re-evaluation of experiments and new theoretical calculations for electron-impact excitation of C^{3+}*
P.H. Janzen, L.D. Gardner, D.B. Reisenfeld, D.W. Savin, J.L. Kohl, and K. Bartschat, Phys. Rev. A **59** (1999) 4821
116. *Electron impact coherence parameters for the 3^1D and 3^3D states of helium*
K. Bartschat, J. Phys. B **32** (1999) L355
117. *Near-threshold measurement of Stokes parameters for Kr excited by polarized electrons*
B.G. Birdsey, H.M. Al-Khateeb, M.E. Johnson, T.C. Bowen, T.J. Gay, V. Zeman, and K. Bartschat, Phys. Rev. A **60** (1999) 1046
118. *Alignment of the $Na^*(2p^53s^2)^2P_{3/2}$ autoionizing state excited by electron impact: experiment and theory*
B. Feuerstein, A.N. Grum-Grzhimailo, K. Bartschat, and W. Mehlhorn, J. Phys. B **32** (1999) 3727
119. *Negative-ion resonance structures in electron-collision-induced alignment of core-excited atomic states*
A.N. Grum-Grzhimailo, K. Bartschat, B. Feuerstein, and W. Mehlhorn, Phys. Rev. A **60** (1999) R1751
120. *Convergent calculations for simultaneous electron-impact ionization–excitation of helium*
A.S. Kheifets, I. Bray, and K. Bartschat, J. Phys. B **32** (1999) L433
121. *Study of electron-impact excitation of metastable Ne $(2p^53s)^3P_2$ substates using laser-induced fluorescence*
S. Fischer, G.F. Hanne, K. Bartschat, V. Zeman, and R. Srivastava, J. Phys. B **32** (1999) 4447
122. *Propensity rules for angular momentum transfer in electron-impact excitation and de-excitation*
K. Bartschat, N. Andersen, and D. Loveall, Phys. Rev. Lett. **83** (1999) 5254
123. *Simulation of collisionally excited atomic states*
D. Loveall, M.B. Hamley, B.J. Miller, and K. Bartschat, Comp. Phys. Commun. **124** (2000) 90
124. *Excitation of Ar $3p^54s \rightarrow 3p^54p$ transitions by electron impact*
C.M. Maloney, J.L. Peacher, K. Bartschat, and D.H. Madison, Phys. Rev. A **61** (2000) 022701
125. *Spin exchange in elastic collisions of polarized electrons with manganese atoms*
R. Meintrup, G.F. Hanne, and K. Bartschat, J. Phys. B **33** (2000) L289
126. *Excitation of the $(3p^54s^2)^2P$ autoionizing state in potassium by electron impact at low energies: an R-matrix calculation*
A.N. Grum-Grzhimailo and K. Bartschat, J. Phys. B **33** (2000) 1843
127. *Internal spin-orbit coupling and electron exchange in the excitation of the $np^5(n+1)p$ states of neon, argon, krypton, and xenon by polarized electrons*
D.H. Yu, P.A. Hayes, J.F. Williams, V. Zeman, and K. Bartschat, J. Phys. B **33** (2000) 1881
128. *Differential cross sections for electron-impact excitation of krypton at low incident energies: I. Excitation of the $4p^35s$ configuration*
X. Guo, D.J. Mathews, G. Mikaelian, M.A. Khakoo, A. Crowe, I. Kanik, S. Trajmar, V. Zeman, K. Bartschat, and C.J. Fontes, J. Phys. B **33** (2000) 1895
129. *Differential cross sections for electron-impact excitation of krypton at low incident energies: II. Excitation of the $4p^55p$, $4p^54d$, and $4p^56s$ configurations*
X. Guo, D.J. Mathews, G. Mikaelian, M.A. Khakoo, A. Crowe, I. Kanik, S. Trajmar, V. Zeman, K. Bartschat, and C.J. Fontes, J. Phys. B **33** (2000) 1921
130. *Excitation and polarization of the 3^3D state of helium by electron impact*
D. Cvejanović, K. Clague, D. Fursa, K. Bartschat, I. Bray, and A. Crowe, J. Phys. B **33** (2000) 2265

131. *Near-threshold correlation studies of the 2^1P and 3^3D states of helium excited by electron impact*
A. Crowe, D. Cvejanović, D.T. McLaughlin, B.P. Donnelly, D. Fursa, I. Bray, and K. Bartschat, *J. Phys. B* **33** (2000) 2571
132. *Electron-impact excitation of the Kr $4p^55s$ states at 15 eV: close-coupling vs. distorted-wave treatments*
K. Bartschat and A.N. Grum-Grzhimailo, *J. Phys. B* **33** (2000) 4603
133. *R-matrix with pseudo-states calculations for electron scattering from cesium atoms*
K. Bartschat and Y. Fang, *Phys. Rev. A* **62** (2000) 052719
134. *Convergent second-order calculations for simultaneous electron-impact ionization–excitation of helium*
Y. Fang and K. Bartschat, *J. Phys. B* **34** (2001) L19
135. *Cross sections and collision dynamics of the excitation of the $(1snp)^1P^o$ levels of helium, $n = 2 - 5$, by intermediate and high velocity electron, proton, and molecular ion (H_2^+ and H_3^+) impact*
H. Merabet, M. Bailey, R. Bruch, J. Hanni, S. Bliman, D.V. Fursa, I. Bray, K. Bartschat, H.C. Tseng, and C.D. Lin, *Phys. Rev. A* **64** (2001) 012712
136. *Experimental and theoretical study of electron impact excitation of the 3^3P state of helium*
N. Igual-Ruiz, B.P. Donnelly, D.T. McLaughlin, D. Cvejanović, A. Crowe, D. Fursa, K. Bartschat, and I. Bray, *J. Phys. B* **34** (2001) 2289
137. *Resonance effects in electron-impact ionization of helium*
Y. Fang and K. Bartschat, *J. Phys. B* **34** (2001) 2747
138. *Resonance effects in simultaneous electron-impact ionization–excitation of helium*
Y. Fang and K. Bartschat, *Phys. Rev. A* **64** (2001) 020701(R)
139. *Electron-impact excitation to the $4p^55s$ and $4p^55p$ levels of Kr I using different distorted-wave and close-coupling methods*
A. Dasgupta, K. Bartschat, D. Vaid, A.N. Grum-Grzhimailo, D.H. Madison, M. Blaha, and J.L. Giuliani, *Phys. Rev. A* **64** (2001) 052710
140. *Polarization of Balmer– α radiation following electron impact on atomic hydrogen*
W. Kedzierski, A. Abdellatif, J.W. McConkey, K. Bartschat, D.V. Fursa, and I. Bray, *J. Phys. B* **34** (2001) 3367
141. *Benchmark comparisons for near-threshold electron-impact excitation of argon metastable levels*
A.N. Grum-Grzhimailo and K. Bartschat, *J. Phys. B* **34** (2001) L727
142. *Electron-impact excitation from the $(4p^55s)$ metastable states of krypton*
A. Dasgupta, K. Bartschat, D. Vaid, A.N. Grum-Grzhimailo, D.H. Madison, M. Blaha, and J.L. Giuliani, *Phys. Rev. A* **65** (2002) 042724
143. *Extraction of energy-differential ionization cross sections in time-dependent calculations*
K. Bartschat, S. Riordan, and G. VerSteeg, *Phys. Rev. A* **65** (2002) 060701(R)
144. *Differential cross sections and cross-section ratios for electron-impact excitation of the neon $2p^53s$ configuration*
M.A. Khakoo, J. Wrkich, M. Larsen, G. Kleiban, I. Kanik, S. Trajmar, M.J. Brunger, P.J.O. Teubner, A. Crowe, C.J. Fontes, R.E.H. Clark, V. Zeman, K. Bartschat, D.H. Madison, R. Srivastava, and A.D. Stauffer, *Phys. Rev. A* **65** (2002) 062711
145. *Convergence of energy-differential ionization cross sections obtained from a T-matrix–approach with R-matrix wavefunctions*
K. Bartschat, M.P. Scott, P.G. Burke, T. Stitt, N.S. Scott, A.N. Grum-Grzhimailo, S. Riordan, G. VerSteeg, and S.I. Strakhova, *Phys. Rev. A* **65** (2002) 062715
146. *Electron impact excitation of molybdenum from the $(3d^54s)^7S$ and $(3d^54s)^5S$ states*
K. Bartschat, A. Dasgupta, and J.L. Giuliani, *J. Phys. B* **35** (2002) 2899
147. *Near-threshold electron-impact excitation of $5p^56s$ states in Xe: an R–matrix study*
A.N. Grum-Grzhimailo and K. Bartschat, *J. Phys. B* **35** (2002) 3479
148. *Detailed experimental and theoretical study of elastic scattering at intermediate energies in the electron–cesium system*
G. Baum, N. Pavlovic, B. Roth, K. Bartschat, Y. Fang, and I. Bray, *Phys. Rev. A* **66** (2002) 022705
149. *Orientation propensities in spin-resolved electron-impact excitation of mercury*
C. Herting, G.F. Hanne, K. Bartschat, A.N. Grum-Grzhimailo, K. Muktava, R. Srivastava, and A.D. Stauffer, *J. Phys. B* **35** (2002) 4439

150. *Search for relativistic effects in electron-impact $S \rightarrow P$ transitions in heavy alkali atoms: polarization, alignment, and orientation for Cs*
N. Andersen and K. Bartschat, J. Phys. B **35** (2002) 4507
151. *Vector ($e, e'\gamma$) correlations in ionization–excitation of He by electron impact*
K. Bartschat and A.N. Grum-Grzhimailo, J. Phys. B **35** (2002) 5035
152. *Accuracy of local exchange in the calculation of continuum wavefunctions*
D.A. Biava, K. Bartschat, H.P. Saha, and D.H. Madison, J. Phys. B **35** (2002) 5121
153. *Convergent R-matrix with pseudostates calculations for electron-impact ionization of the $n = 2$ states in helium*
K. Bartschat, J. Phys. B **35** (2002) L527
154. *A novel electron scattering apparatus combining a laser photoelectron source and a triply differentially pumped supersonic beam target: characterization and results for the $\text{He}^-(1s2s^2)$ resonance*
A. Gopalan, J. Bömmels, S. Götte, A. Landwehr, K. Franz, M.-W. Ruf, H. Hotop, and K. Bartschat, European Journal of Physics (2002), electronically published under DOI: 10.1140/epjd/e2002-00219-7; printed version: European Physics Journal D **22** (2003) 17
155. *Channel-coupling in electron-impact excitation of He 3^1D : effects on cross sections, orientation, and alignment*
K. Bartschat and N. Andersen, J. Phys. B **36** (2003) 163
156. *Ultralow-energy electron scattering from alkaline-earth atoms: the scattering-length limit*
K. Bartschat and H.R. Sadeghpour, J. Phys. B **36** (2003) L7
157. *Scattering angle-integrated (total) and magnetic sublevel cross sections and degree of linear polarization for electron and proton induced excitation of $\text{HeI}(1snp)^1P^o$ ($n = 2 - 5$)*
H. Merabet, R. Bruch, H. Hanni, M. Bailey, A.L. Godunov, J.H. McGuire, D.V. Fursa, I. Bray, K. Bartschat, H.C. Tseng, and C.D. Lin, Atomic Data and Nuclear Data Tables **83** (2003) 45
158. *Ionization–excitation magnetic sublevel cross sections for $\text{He}^+(2p)^2P^o$ states following fast electron and proton impact*
H. Merabet, R. Bruch, S. Füllung, M. Bailey, A. L. Godunov, J. H. McGuire, A. N. Grum-Grzhimailo, and K. Bartschat, Nuclear Instruments and Methods in Physics Research Section B **205** (2003) 399
159. *Cascade effects in the excitation of $np^5(n+1)p$ states in krypton and xenon atoms by polarized electrons*
D.H. Yu, J.F. Williams, X.J. Chen, P.A. Hayes, K. Bartschat, and V. Zeman, Phys. Rev. A **67** (2003) 032707
160. *Box-based convergent close-coupling for solving Coulomb few-body problems*
I. Bray, K. Bartschat and A.T. Stelbovics, Phys. Rev. A **67** (2003) 060704(R)
161. *Time-dependent model calculations for the molecular hydrogen ion in a strong ultra-short laser pulse*
G.L. Ver Steeg, K. Bartschat and I. Bray, J. Phys. B **36** (2003) 3325
162. *Ionization–excitation of helium to $\text{He}^+(2p)$ magnetic sublevels following electron, proton, and molecular hydrogen (H_2^+ and H_3^+) impact*
H. Merabet, R. Bruch, S. Füllung, K. Bartschat and A.L. Godunov, J. Phys. B **36** (2003) 3383
163. *Box-based and Laguerre-based convergent close-coupling calculations of electron–helium ionisation*
I. Bray, K. Bartschat, D.V. Fursa and A.T. Stelbovics, J. Phys. B **36** (2003) 3425
164. *Unambiguous ionization amplitudes for electron–hydrogen scattering*
P.L. Bartlett, I. Bray, S. Jones, A.T. Stelbovics, A.S. Kadyrov, K. Bartschat, G.L. Ver Steeg, M.P. Scott and P.G. Burke, Phys. Rev. A **67** (2003) 020702(R)
165. *Validation of orientation propensities in electron-impact excitation of lead*
C. Herting, G.F. Hanne, K. Bartschat, K. Muktavat, R. Srivastava and A.D. Stauffer, J. Phys. B **36** (2003) 3877
166. *Alignment after $2p$ ionization of Na atoms by electron impact: the $2p^5 3s^1 P_1$ and $^3 P_1$ states*
M. Wetzstein, T. Benchekmoumou, O.I. Zatsarinny, A.N. Grum-Grzhimailo, K. Bartschat, and W. Mehlhorn, J. Phys. B **36** (2003) 3961
167. *An experimental and theoretical study of transient negative ions in Mg, Zn, Cd and Hg*
J.P. Sullivan, P.D. Burrow, D.S. Newman, K. Bartschat, J.A. Michejda, R. Panajotovic, R.P. McEachran, and S.J. Buckman, New Journal of Physics **5** (2003) 159
168. *Electron-impact excitation of the argon $3p^5 4s$ configuration: differential cross sections and cross section ratios*
M.A. Khakoo, P. Vandeventer, J.G. Childers, I. Kanik, C.J. Fontes, K. Bartschat, V. Zeman, D.H. Madison, S. Saxena, R. Srivastava, and A.D. Stauffer, J. Phys. B **37** (2004) 247

169. *Integral cross sections for electron-impact excitation of the $3p^5 3d$ states of argon*
D.H. Madison, A. Dasgupta, K. Bartschat, and D. Vaid, J. Phys. B **37** (2004) 1073
170. *Ionization of rubidium by 50 eV electrons*
M.A. Haynes, B. Lohmann, I. Bray, and K. Bartschat, Phys. Rev. A **69** (2004) 044704
171. *B-spline Breit-Pauli R-matrix calculations for electron collisions with neon atoms*
O. Zatsarinny and K. Bartschat, J. Phys. B **37** (2004), 2173.
172. *Kinematic pathways to visible emission from a moly-oxide-argon discharge lamp*
G.M. Petrov, J.L. Giuliani, A. Dasgupta, K. Bartschat, and R.E. Pechacek, Journal of Applied Physics **95** (2004) 5284
173. *On the convergence of the close-coupling approximation for low-energy electron scattering from magnesium*
K. Bartschat, O. Zatsarinny, I. Bray, D.V. Fursa, and A.T. Stelbovics, J. Phys. B **37** (2004) 2617
174. *Close-coupling and distorted-wave calculations for electron-impact excitation of the $5p^5 6p$ states of xenon*
K. Bartschat, A. Dasgupta, and D.H. Madison, Phys. Rev. A **69** (2004) 062706
175. *Angle-differential cross sections and spin-asymmetry parameters for spin-polarized electron-impact excitation of spin-polarized cesium atoms*
G. Baum, S. Förster, N. Pavlovic, B. Roth, K. Bartschat and I. Bray, Phys. Rev. A **70** (2004) 012707
176. *Dipole polarization in coherently excited Stark states*
N. Andersen and K. Bartschat, J. Phys. B **37** (2004) 3809
177. *Cross sections and transport coefficients for electrons in Zn vapour*
R.D. White, R.P. McEachran, R.E. Robson, M.T. Elford, and K. Bartschat, J. Phys. D **37** (2004) 3185
178. *Electron-impact induced transitions in molybdenum and their use in modeling of a moly-oxide discharge lamp*
K. Bartschat, A. Dasgupta, G.M. Petrov, and J.L. Giuliani, New Journal of Physics **6** (2004) 145
179. *Calculated cross sections for the electron-impact ionization of excited argon atoms using the DM formalism*
H. Deutsch, K. Becker, A.N. Grum-Grzhimailo, K. Bartschat, H. Summers, M. Probst, S. Matt-Leubner, and T.D. Märk, International Journal of Mass Spectrometry **233** (2004) 39
180. *Electron-impact broadening of Sr^+ lines in ultracold neutral plasmas*
D. Vrinceanu, H.R. Sadeghpour and K. Bartschat, J. Phys. B **37** (2004) L371
181. *B-Spline Breit-Pauli R-matrix calculations for electron collisions with argon atoms*
O. Zatsarinny and K. Bartschat, J. Phys. B **37** (2004) 4693
182. *Low-lying resonances in $e-Ne$ scattering: measurements at 4 meV resolution and comparison with theory*
J. Bömmels, K. Franz, T.H. Hoffmann, A. Gopalan, O. Zatsarinny, K. Bartschat, M.-W. Ruf, and H. Hotop, Phys. Rev. A **71** (2005) 012704
183. *Experimental and theoretical ($e,2e$) studies of argon ($3p$) ionization in asymmetric geometry*
M. Stevenson, G.J. Leighton, A. Crowe, K. Bartschat, O.K. Vorov and, D.H. Madison, J. Phys. B **38** (2005) 433
184. *Benchmark calculations for electron collisions with zinc atoms*
O. Zatsarinny and K. Bartschat, Phys. Rev. A **71** (2005) 022716
185. *Electron-impact of the $(3p^5 4s^2)^2 P_{3/2,1/2}$ states in potassium*
A.A. Borovik, A.N. Grum-Grzhimailo, O. Zatsarinny, and K. Bartschat, J. Phys. B **38** (2005) 1081
186. *Model sensitivity of theoretical results for ionization–excitation of helium*
O.K. Vorov and K. Bartschat, J. Phys. B **38** (2005) 1189
187. *Direct ionization of heavy noble gases by positron impact*
K. Bartschat, Phys. Rev. A **71** (2005) 032718
188. *Electron-impact excitation of carbon*
O. Zatsarinny, K. Bartschat, L. Bandurina, and V. Gedeon, Phys. Rev. A **71** (2005) 042702
189. *Electron-impact ionization of helium for equal-energy sharing kinematics*
A.T. Stelbovics, I. Bray, D.V. Fursa and K. Bartschat, Phys. Rev. A **71** (2005) 052716
190. *Simultaneous ionization–excitation to the $He^+ 2^2P$ state by electron impact: an ($e,2e\gamma$) experiment*
G. Sakelashvili, A. Dorn, C. Höhr, J. Ullrich, A. Kheifets, J. Lower, and K. Bartschat, Phys. Rev. Lett. **95** (2005) 033201

191. *Benchmark calculations for electron collisions with Fe^+*
O. Zatsarinny and K. Bartschat, Phys. Rev. A **72** (2005) 020702(R)
192. *Channel-coupling, target-structure, and second-order effects in electron impact ionization of $Ar(3p)$ and $Ar(3s)$*
K. Bartschat and O.K. Vorov, Phys. Rev. A **72** (2005) 022728
193. *Channel-coupling and relativistic effects in electron-impact excitation of rubidium*
D. Payne, B. Krueger, and K. Bartschat, J. Phys. B **38** (2005) 3349
194. *Spin asymmetries in elastic and inelastic electron scattering from rubidium*
W.E. Guinea, G.F. Hanne, M.R. Went, M.L. Daniell, M.A. Stevenson, K. Bartschat, D. Payne, W.R. MacGillibray, and B. Lohmann, J. Phys. B **38** (2005) 3359
195. *Exchange distortion and post-collision interaction for intermediate-energy electron-impact ionization of argon*
A. Prideaux, D.H. Madison, and K. Bartschat, Phys. Rev. A **72** (2005) 032702
196. *Electron-impact excitation of Mg at $20 eV$*
D.O. Brown, A. Crowe, D.V. Fursa, I. Bray, and K. Bartschat, J. Phys. B **38** (2005) 4123
197. *Nucleation and growth of vortices in a rotating Bose-Einstein condensate*
O.K. Vorov, P. Van Isacker, M.S. Hussein, and K. Bartschat, Phys. Rev. Lett. **95** (2005) 230406
198. *Partial photoionization cross sections and angular distributions for double excitation of helium up to the $N = 13$ threshold*
A. Czasch, M. Schöffler, M. Hattaß, S. Schöbler, T. Jahnke, T. Weber, A. Staudte, J. Titze, C. Wimmer, S. Kammer, M. Weckenbrock, S. Voss, R. Grisenti, O. Jagutzki, L. Schmidt, H. Schmidt-Böcking, R. Dörner, J.-M. Rost, T. Schneider, Chien-Nan Liu, I. Bray, A. S. Kheifets, and K. Bartschat, Phys. Rev. Lett. **95** (2005) 243003
199. *The role of cascade processes in electron-impact excitation of the $(3p^5 4s^2)^2 P_{3/2,1/2}$ autoionizing levels in potassium*
A. Kupliauskiene, P. Bogdanovic, A.A. Borovik, O. Zatsarinny, A.N. Grum-Grzhimailo, and K. Bartschat, J. Phys. B **39** (2006) 591
200. *Low-energy elastic electron scattering by atomic oxygen*
O. Zatsarinny, K. Bartschat, and S.S. Tayal, J. Phys. B **39** (2006) 1237
201. *Low-energy photodetachment of O^-*
O. Zatsarinny and K. Bartschat, Phys. Rev. A **73** (2006) 022714
202. *Absolute angle-differential cross sections for electron-impact excitation of neon atoms from threshold to $19.5 eV$*
M. Allan, K. Franz, H. Hotop, O. Zatsarinny and K. Bartschat, J. Phys. B **39** (2006) L139
203. *Integral cross sections for electron-impact excitation of the 3^3S and 3^1S states of He near threshold*
M. Stepanovic, M. Minic, D. Cvejanovic, J. Jureta, J. Kurepa, S. Cvejanovic, O. Zatsarinny, and K. Bartschat, J. Phys. B **39** (2006) 1547
204. *B-spline calculations of oscillator strengths in neutral argon*
O. Zatsarinny and K. Bartschat, J. Phys. B **39** (2006) 2145
205. *$(e, e\gamma)$ -coincidence studies to determine spin-resolved Stokes parameters of the $185 nm$ emission line in mercury*
G. Außendorf, F. Jüttemann, K. Muktavat, L. Sharma, R. Srivastava, A.D. Stauffer, K. Bartschat, D.V. Fursa, I. Bray, and G.F. Hanne, J. Phys. B **39** (2006) 2403
206. *Near-threshold electron-impact excitation of the $(3p^5 4s 4p)^4 S_{3/2}$ quasi-metastable state in potassium*
A.A. Borovik, Jr., A.A. Borovik, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **73** (2006) 062701
207. *Investigation of the $(e, 2e)$ single ionization of He and Ar at large energy loss close to minimum momentum transfer*
F. Catoire, E.M. Staicu-Casagrande, M. Nekkab, C. Dal Cappello, K. Bartschat, and A. Lahmam-Bennani, J. Phys. B **39** (2006) 2827
208. *Oscillator strengths for allowed and intercombination transitions in neutral sulfur*
O. Zatsarinny and K. Bartschat, J. Phys. B **39** (2006) 2861
209. *Electron-impact ionization and excitation of helium to the $n = 1 - 4$ ionic states*
S. Bellm, J. Lower, and K. Bartschat, Phys. Rev. Lett. **96** (2006) 223201

210. *Laser transition probabilities in Xe I*
A. Dasgupta, J.P. Apruzese, O. Zatsarinny, K. Bartschat, and C. Froese Fischer, Phys. Rev. A **74** (2006) 012509
211. *Electron-impact ionization cross sections out of the ground and the $(6p)^2P$ excited states of Cs*
M. Lukowski, S. Sutton, W. Kedzierski, T.J. Reddish, K. Bartschat, P.L. Bartlett, I. Bray, A.T. Stelbovics, and J.W. McConkey, Phys. Rev. A **74** (2006) 032708
212. *Single ionization of helium by 102 eV electron impact: three-dimensional images for electron emission*
M. Dürr, C. Dimopoulou, A. Dorn, B. Najjari, I. Bray, D.V. Fursa, Z. Chen, D.H. Madison, K. Bartschat, and J. Ullrich, J. Phys. B **39** (2006) 4097
213. *Benchmark experiment and theory for near-threshold excitation of helium by electron impact*
M. Lange, J. Matsumoto, J. Lower, S. Buckman, O. Zatsarinny, K. Bartschat, I. Bray, and D. Fursa, J. Phys. B **39** (2006) 4179
214. *Total polarization of the 185 nm emission line of mercury excited by electron impact*
G. Außendorf, F. Jüttemann, K. Muktavat, L. Sharma, R. Srivastava, A.D. Stauffer, K. Bartschat, D.V. Fursa, I. Bray, and G.F. Hanne, J. Phys. B **39** (2006) 4435
215. *Near-threshold absolute angle-differential cross sections for electron-impact excitation of argon and xenon*
M. Allan, O. Zatsarinny and K. Bartschat, Phys. Rev. A **74** (2006) 030701(R)
216. *Controlling the angular distribution of atomic photo-electrons in the region of laser-induced continuum structure in the femtosecond time domain*
A.N. Grum-Grzhimailo, A.D. Kondorskiy, and K. Bartschat, J. Phys. B **39** (2006) 4659
217. *Low-energy electron scattering from Ca atoms and photodetachment of Ca^-*
O. Zatsarinny, K. Bartschat, S. Dedeon, V. Gedeon, and V. Lazur, Phys. Rev. A **74** (2006) 052708
218. *B-spline R-matrix calculations for the spin asymmetry function in electron-impact excitation of argon and krypton*
K. Bartschat and O. Zatsarinny, J. Phys. B **40** (2007) F43
219. *Effects of the final state electron-ion interactions on the fully differential cross sections for heavy particle impact ionization of helium*
A.L. Harris, D.H. Madison, J.L. Peacher, M. Foster, K. Bartschat, and H.P. Saha, Phys. Rev. A **75** (2007) 032718
220. *Ionization and ionization-excitation of helium to the $n = 1-4$ states of He^+ by electron impact*
S. Bellm, J. Lower, K. Bartschat, X. Guan, D. Weflen, M. Foster, A.L. Harris, and D.H. Madison, Phys. Rev. A **75** (2007) 042704
221. *Superelastic electron scattering from laser-excited caesium atoms*
D.S. Slaughter, V. Karaganov, M.J. Brunger, P.J.O. Teubner, I. Bray, and K. Bartschat, Phys. Rev. A **75** (2007) 062717
222. *Investigation of the closure and simplified Green's function approximations in second-order distorted-wave calculations for $(e,2e)$ processes*
Z. Chen, D.H. Madison, and K. Bartschat, J. Phys. B **40** (2007) 2333
223. *New coplanar $(e,2e)$ experiments for the ionisation of He and Ar atoms*
E.M. Staicu-Casagrande, F. Catoire, A. Naja, X.G. Ren, A. Lahmam-Bennani, M. Nekkab, C. Dal Cappello, K. Bartschat, and C.T. Whelan, J. Elect. Spectr. and Rel. Phen. **161** (2007) 27
224. *Electron kinetics of the e-beam pumped Ar-Xe laser*
G.M. Petrov, J.L. Giuliani, J.P. Apruzese, A. Dasgupta, Tz. Petrova, K. Bartschat, and D. Rose, J. Phys. D **40** (2007) 4532
225. *Absolute triple-differential cross sections for ionization-excitation of helium*
K. Bartschat, I. Bray, D.V. Fursa, and A.T. Stelbovics, Phys. Rev. A **76** (2007) 024703; *erratum*: Phys. Rev. A **77** (2008) 029903
226. *Electron-impact ionization of magnesium*
K. Bartschat, D. Weflen, and X. Guan, J. Phys. B **40** (2007) 3231
227. *Electron-impact excitation of calcium*
O. Zatsarinny, K. Bartschat, L. Bandurina, and S. Gedeon, J. Phys. B **40** (2007) 4023

228. *A general approach to few-cycle intense laser interactions with complex atoms*
X. Guan, O. Zatsarinny, K. Bartschat, B.I. Schneider, J. Feist, and C.J. Noble, Phys. Rev. A **76** (2007) 053411
229. *Near-threshold electron-impact excitation of the $(2p^53s^2)^2P_{3/2,1/2}$ autoionizing states in sodium*
A.A. Borovik, O. Zatsarinny, and K. Bartschat, J. Phys. B **41** (2008) 035206
230. *Higher-order contributions observed in three-dimensional $(e,2e)$ cross sections at 1 keV impact energy*
M. Dürr, C. Dimopoulou, B. Najjari, A. Dorn, I. Bray, D.V. Fursa, Z. Chen, D.H. Madison, K. Bartschat, and J. Ullrich, Phys. Rev. A **77** (2008) 032717
231. *Out-of-plane $(e,2e)$ experiments on helium autoionizing levels*
B.A. deHarak, K. Bartschat, and N.L.S. Martin, Phys. Rev. Lett. **100** (2008) 063201
232. *Dynamics of two-photon double ionization of helium in short intense XUV laser pulses*
X. Guan, K. Bartschat, and B.I. Schneider, Phys. Rev. A **77** (2008) 043421
233. *An $(e,2e)$ study of the ionization and ionization-excitation of magnesium to the $Mg^+(3s)$, $(3p)$, and $(4s3d)$ states*
P. Bolognesi, L. Pravica, S. Veronesi, E. Fainelli, L. Avaldi, and K. Bartschat, J. Phys. B **41** (2008) 065203
234. *$(e,2e)$ triple-differential cross sections for ionization beyond helium: the neon case at large energy transfer*
A. Naja, E.M. Staicu-Casagrande, A. Lahmam-Bennani, M. Stevenson, B. Lohmann, C. Dal Capello, K. Bartschat, A. Kheifets, I. Bray, and D.V. Fursa, J. Phys. B **41** (2008) 085205
235. *Relativistic B-spline R-matrix method for electron collisions with atoms and ions: Application to low-energy electron scattering from Cs*
O. Zatsarinny and K. Bartschat, Phys. Rev. A **77** (2008) 062701
236. *Electron-impact excitation of the $(6s)^2S_{1/2} \rightarrow (6p)^2P_{1/2,3/2}$ resonance transitions in gold*
M. Maslov, M.J. Brunger, P.J.O. Teubner, O. Zatsarinny, K. Bartschat, D.V. Fursa, I. Bray, and R.P. McEachran, Phys. Rev. A **77** (2008) 062711
237. *Reconstruction of an electron energy distribution function using integrated data analysis*
D. Dodt, A. Dinklage, R. Fischer, K. Bartschat, O. Zatsarinny, and D. Loffhagen, J. Phys. D **41** (2008) 205207
238. *Improved absolute cross sections for the ionization–excitation of helium by electron impact*
S. Bellm, J. Lower, E. Weigold, I. Bray, D.V. Fursa, K. Bartschat, A.L. Harris, and D.H. Madison, Phys. Rev. A **78** (2008) 032710
239. *Electron-impact excitation of the $(5d^{10}6s)^2S_{1/2} \rightarrow (5d^96s^2)^2D_{5/2,3/2}$ transitions in gold*
O. Zatsarinny, K. Bartschat, M. Maslov, M.J. Brunger, and P.J.O. Teubner, Phys. Rev. A **78** (2008) 042713
240. *Time-dependent R-matrix calculations for multi-photon ionization of argon atoms in intense laser pulses*
X. Guan, C.J. Noble, O. Zatsarinny, K. Bartschat, and B.I. Schneider, Phys. Rev. A **78** (2008) 053402
241. *Absolute angle-differential cross sections for electron-impact excitation of neon within the first 3.5 eV above threshold*
M. Allan, K. Franz, H. Hotop, O. Zatsarinny and K. Bartschat, J. Phys. B **42** (2009) 044009
242. *Resonance effects in electron and photon impact excitation of the p^6 subvalence subshell in alkali atoms*
A.A. Borovik, O. Zatsarinny, and K. Bartschat, J. Phys. B **42** (2009) 044010
243. *Fully differential cross-section measurements for electron-impact ionization of neon and xenon*
M.A. Stevenson, L.R. Hargreaves, B. Lohmann, I. Bray, D.V. Fursa, K. Bartschat, and A. Kheifets, Phys. Rev. A **79** (2009) 012709
244. *Multipole polarizabilities and long-range interactions of the fluorine atoms*
O. Zatsarinny, K. Bartschat, J. Mitroy, and J.-Y. Zhang, J. Chem. Phys. **130** (2009) 124310
245. *Emission cross sections for electron-impact excitation of zinc atoms*
S.A. Napier, D. Cvejanovic, J.F. Williams, L. Pravica, D. Fursa, I. Bray, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **79** (2009) 042702
246. *Spin-resolved electron-impact excitation of the $6s6p$ ($J = 1$) states in mercury*
F. Jüttemann, G.F. Hanne, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **79** (2009) 042712
247. *Fully relativistic R-matrix calculations for electron collisions with mercury*
O. Zatsarinny, and K. Bartschat, Phys. Rev. A **79** (2009) 042713
248. *Time-dependent B-spline R-matrix approach to double ionization of atoms by XUV laser pulses*
X. Guan, O. Zatsarinny, C.J. Noble, K. Bartschat, and B.I. Schneider, J. Phys. B **42** (2009) 134015

249. *Cross sections for electron scattering from magnesium*
O. Zatsarinny, K. Bartschat, S. Gedeon, V. Gedeon, V. Lazur, and E. Nagy, Phys. Rev. A **79** (2009) 052709
250. *Near-infrared collisional radiative model for Xe plasma electrostatic thrusters: the role of metastable atoms*
R.A. Dressler, Y. Chiu, O. Zatsarinny, K. Bartschat, R. Srivastava, and L. Sharma, J. Phys. D **42** (2009) 185203
251. *An Arnoldi-Lanczos program to propagate the time-dependent Schrödinger equation*
X. Guan, C.J. Noble, O. Zatsarinny, K. Bartschat, B. I. Schneider, Comp. Phys. Commun. **180** (2009) 2401
252. *Long-range interactions of the chlorine atom*
O. Zatsarinny, K. Bartschat, J. Mitroy, and J.-Y Zhang, Molecular Physics **107** (2009) 2387
253. *Complex Fano asymmetry parameters for helium $L = 0, 1, 2$ autoionizing levels excited by electron impact*
N.L.S. Martin, B.A. deHarak, and K. Bartschat, J. Phys. B **42** (2009) 225201
254. *Spin-asymmetry function for elastic electron scattering from lead atoms in the energy range 11–14 eV*
V. Hamelbeck, G.F. Hanne, O. Zatsarinny, K. Bartschat, R.K. Gangwar, and R. Srivastava, Phys. Rev. A **80** (2009) 062711
255. *Complete breakup of the helium atom by proton and antiproton impact*
X. Guan and K. Bartschat, Physical Review Letters **103** (2009) 213201
256. *Angle-differential Stokes parameters for spin-polarized electron-impact excitation of the Hg $(6s6p)^3P_1$ state at 25 eV scattering energy*
F. Jüttemann, G.F. Hanne, O. Zatsarinny, K. Bartschat, R. Srivastava, R.K. Gangwar, and A.D. Stauffer, Phys. Rev. A **81** (2010) 012705
257. *Signatures of projectile–nucleus scattering in three-dimensional $(e, 2e)$ cross sections for argon*
X. Ren, A. Senftleben, T. Pflüger, A. Dorn, K. Bartschat, and J. Ullrich, J. Phys. B **43** (2010) 035202
258. *Benchmark calculations for near-threshold electron-impact excitation of krypton and xenon atoms*
O. Zatsarinny and K. Bartschat, J. Phys. B **43** (2010) 074031
259. *New light on the Kr $(4p^55s^2)$ Feshbach resonances: high resolution electron scattering experiments and B-spline R-matrix calculations*
T.H. Hoffmann, M.-W. Ruf, H. Hotop, O. Zatsarinny, K. Bartschat, and M. Allan, J. Phys. B **43** (2010) 085206
260. *Ionization of atomic hydrogen in strong infrared laser fields*
A. N. Grum-Grzhimailo, B. Abeln, K. Bartschat, D. Weflen, and T. Urness, Physical Review A **81** (2010) 043408
261. *Electron impact excitation of the $(3d^{10}4s)^2S_{1/2} \rightarrow (3d^94s^2)^2D_{5/2,3/2}$ transitions in copper atoms*
O. Zatsarinny, K. Bartschat, V. Suvorov, P.J.O. Teubner, and M.J. Brunger, Physical Review A **81** (2010) 062705
262. *A detailed study of electron impact ionization of Ne(2s) and Ar(3s)*
K. Bartschat, D.V. Fursa, and I. Bray, J. Phys. B **43** (2010) 125202
263. *Validation of atomic data using a plasma discharge*
D. Dodt, A. Dinklage, K. Bartschat, and O. Zatsarinny, New Journal of Physics **12** (2010) 073018
264. *Benchmark calculations for electron impact ionization and ionization-excitation of magnesium*
K. Bartschat, A.S. Kheifets, D.V. Fursa, and I. Bray, J. Phys. B **43** (2010) 165205
265. *A new Fortran 90 program to compute regular and irregular associated Legendre functions*
B.I. Schneider, J. Segura, A. Gil, X. Guan, and K. Bartschat, Comp. Phys. Commun. **181** (2010) 2091
266. *Two-photon double ionization of H_2 in intense femtosecond laser pulses*
X. Guan, K. Bartschat, and B.I. Schneider, Phys. Rev. A **82** (2010) 041404(R)
267. *Electron collisions with copper atoms: Elastic scattering and electron-impact excitation of the $(3d^{10}4s)^2S \rightarrow (3d^{10}4p)^2P$ resonance transition*
O. Zatsarinny and K. Bartschat, Phys. Rev. A **82** (2010) 062705
268. *Out-of-plane $(e, 2e)$ angular distributions and energy spectra of helium $L = 0, 1, 2$ autoionizing levels*
B.A. deHarak, K. Bartschat, and N.L.S. Martin, Phys. Rev. A **82** (2010) 062703
269. *Near-threshold electron impact excitation of the argon $3p^54s$ configuration: new and revised normalized differential cross sections using recent time-of-flight measurements for normalization*
M.A. Khakoo, O. Zatsarinny, and K. Bartschat, J. Phys. B **44** (2011) 015201

270. *Strong-field ionization of lithium*
M. Schuricke, G. Zhu, J. Steinmann, K. Simeonidis, I. Ivanov, A.S. Kheifets, A.N. Grum-Grzhimailo, K. Bartschat, A. Dorn, and J. Ullrich, Phys. Rev. A **83** (2011) 023413
271. *Differential cross sections for electron impact excitation of the $n = 2$ states of helium at intermediate energies (80, 100 and 120 eV) measured across the complete angular scattering range ($0^\circ - 180^\circ$)*
R. Ward, D. Cubric, N. Bowring, G.C. King, F.H. Read, D.V. Fursa, I. Bray, O. Zatsarinny, and K. Bartschat, J. Phys. B **44** (2011) 045209
272. *Benchmark calculations of atomic data for plasma and lighting applications*
K. Bartschat and O. Zatsarinny, Plasma Sources Science and Technology **20** (2011) 024012
273. *Electron impact excitation of the ($4p^5 5s$) states in krypton: High-resolution electron scattering experiments and B-spline R-matrix calculations*
M. Allan, O. Zatsarinny, and K. Bartschat, J. Phys. B **44** (2011) 065201
274. *Breakup of the aligned H_2 molecule by xuv laser pulses: A time-dependent treatment in prolate spheroidal coordinates*
X. Guan, K. Bartschat, and B.I. Schneider, Phys. Rev. A **83** (2011) 043403
275. *High-resolution experiments and B-spline R-matrix calculations for elastic electron scattering from krypton*
O. Zatsarinny, K. Bartschat, and M. Allan, Phys. Rev. A **83** (2011) 032713
276. *Unexpected effects in spin-polarized electron impact excitation of the $(3d^{10}4s5s)^3S_1$ state in zinc*
L. Pravica, J.F. Williams, D. Cvejanović, S. Samarin, K. Bartschat, O. Zatsarinny, A.D. Stauffer, and R. Srivastava, Phys. Rev. A **83** (2011) 040701
277. *Electron collision cross sections for iodine*
O. Zatsarinny, K. Bartschat, G. Garcia, F. Blanco, L.R. Hargreaves, D.B. Jones, R. Murrie, J.R. Brunton, M.J. Brunger, M. Hoshino, and S.J. Buckman, Phys. Rev. A **83** (2011) 042702
278. *Benchmark experiment for electron-impact ionization of argon: Absolute triple-differential cross sections via three-dimensional electron emission images*
X. Ren, A. Senftleben, T. Pflüger, A. Dorn, K. Bartschat, and J. Ullrich, Phys. Rev. A **83** (2011) 052714
279. *Experimental ionization of atomic hydrogen with few-cycle pulses*
M.G. Pullen, W.C. Wallace, D.E. Laban, A.J. Palmer, G.F. Hanne, A.N. Grum-Grzhimailo, B. Abeln, K. Bartschat, D. Weflen, I. Ivanov, A. Kheifets, H.M. Quiney, I.V. Litvinyuk, R.T. Sang, and D. Kielpinski, Optics Letters **36** (2011) 3660
280. *Nonperturbative treatment of ionization and excitation of helium by electron impact*
O. Zatsarinny and K. Bartschat, Phys. Rev. Lett. **107** (2011) 023203
281. *Alignment effects in two-photon double ionization of H_2 in femtosecond xuv laser pulses*
X. Guan, K. Bartschat, and B.I. Schneider, Phys. Rev. A **84** (2011) 033403
282. *Multi-photon ionization of H_2^+ in laser pulses*
X. Guan, E. Secor, K. Bartschat, and B.I. Schneider, Phys. Rev. A **84** (2011) 033420
283. *Electron scattering from silicon*
V. Gedeon, S. Gedeon, V. Lazur, E. Nagy, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **85** (2012) 022711
284. *Low-energy electron-impact ionization of argon: Three-dimensional cross section,*
X. Ren, T. Pflüger, J. Ullrich, O. Zatsarinny, K. Bartschat, D.H. Madison, and A. Dorn, Phys. Rev. A (2012) **85** (2012) 032702
285. *Nonperturbative treatment of electron-impact ionization of $Ar(3p)$*
O. Zatsarinny, and K. Bartschat, Phys. Rev. A **85** (2012) 032708
286. *Double-slit interference effect in electron emission from H_2^+ exposed to x-ray radiation*
X. Guan, E.B. Secor, K. Bartschat, and B.I. Schneider, Phys. Rev. A **85** (2012) 043419
287. *Unusual angular momentum transfer in electron-impact excitation of neon*
L.R. Hargreaves, C. Campbell, M.A. Khakoo, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **85** (2012) 050701
288. *Nonperturbative B-spline R-matrix-with-pseudostates calculations for electron-impact ionization of helium*
O. Zatsarinny, and K. Bartschat, Phys. Rev. A **85** (2012) 062709

289. *Large-scale pseudostate calculations for electron scattering from neon atoms*
O. Zatsarinny, and K. Bartschat, Phys. Rev. A **85** (2012) 062710
290. *Electron impact excitation of neon at intermediate energies*
O. Zatsarinny and K. Bartschat, Phys. Rev. A **86** (2012) 022717
291. *Diffraction patterns in the ionization of the heteronuclear HeH^{2+} ion by attosecond x-ray radiation*
X. Guan, E.B. Secor, R.C. DuToit, and K. Bartschat, Phys. Rev. A **86** (2012) 053425
292. *Electron impact excitation of the lowest doublet and quartet core-excited autoionizing states in Rb atoms*
A. Borovik, V. Roman, O. Zatsarinny, and K. Bartschat, J. Phys. B **46** (2013) 015203
293. *B-spline R-matrix-with-pseudostates calculations for electron-impact excitation and ionization of carbon*
Y. Wang, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **87** (2013) 012704
294. *Comment II on “Topological angular momentum in electron exchange excitation of a single atom”* K. Bartschat and O. Zatsarinny, Phys. Rev. A **87** (2013) 016702
295. *Fine-structure-resolved electron collisions from chlorine atoms in the $(3p^5)^2P_{3/2,1/2}^o$ states*
Y. Wang, O. Zatsarinny, K. Bartschat, and J.-P. Booth, Phys. Rev. A **87** (2013) 022703
296. *Relativistic B-spline R-matrix calculations for electron collisions with lead atoms: differential cross sections and spin asymmetries*
O. Zatsarinny, Y. Wang, and K. Bartschat, J. Phys. B **46** (2013) 035202
297. *Polarization correlations for electron-impact excitation of the resonant transitions of Ne and Ar at low incident energies*
L. R. Hargreaves, C. Campbell, M. A. Khakoo, J. W. McConkey, O. Zatsarinny, K. Bartschat, A. D. Stauffer, and R. P. McEachran, Phys. Rev. A **87** (2013) 022711
298. *Carrier-envelope phase effects in above-threshold ionization of atomic hydrogen*
W.C. Wallace, M.G. Pullen, D.E. Laban, A.J. Palmer, G.F. Hanne, A.N. Grum-Grzhimailo, K. Bartschat, H.M. Quiney, I.V. Litvinyuk, R.T. Sang, and D. Kielpinski, New J. of Phys. **15** (2013) 033002
299. *Electron-impact ionization of neon at low projectile energy: An internormalized experiment for a complex target*
T. Pflüger, O. Zatsarinny, K. Bartschat, A. Senftleben, X. Ren, J. Ullrich, and A. Dorn, Phys. Rev. Lett. **110** (2013) 153202.
300. *Anomalously large low-energy elastic cross sections for electron scattering from the CF_3 radical*
J. R. Brunton, L. R. Hargreaves, S. J. Buckman, G. García, F. Blanco, O. Zatsarinny, K. Bartschat, and M. J. Brunger, Chem. Phys. Lett. **568-569** (2013) 55.
301. *Experimental and theoretical investigation of $(e,2e)$ ionization of $Ar(3p)$ in asymmetric kinematics at 200 eV*
M. Ulu, Z. Nur Ozer, M. Yavuz, O. Zatsarinny, K. Bartschat, M. Dogan, and A. Crowe, J. Phys. B **46** (2013) 115004
302. *Photoionization of the H_2^+ ion by ultrashort elliptically polarized laser pulses*
X. Guan, R. C. DuToit, and K. Bartschat, Phys. Rev. A **87** (2013) 053410
303. *Measurement of laser intensities approaching 10^{15} W/cm² with an accuracy of 1%*
M. G. Pullen, W. C. Wallace, D. E. Laban, A. J. Palmer, G. F. Hanne, A. N. Grum-Grzhimailo, K. Bartschat, I. Ivanov, A. Kheifets, D. Wells, H. M. Quiney, X. M. Tong, I. V. Litvinyuk, R. T. Sang, and D. Kielpinski, Phys. Rev. A **87** (2013) 053411
304. *Comparisons of sets of electron-neutral scattering cross sections and swarm parameters in noble gases I. Argon*
L. C. Pitchford, L. L. Alves, K. Bartschat, S. F. Biagi, M. C. Bordage, A. V. Phelps, C. M. Ferreira, G. J. M. Hagelaar, W. L. Morgan, S. Pancheshnyi, V. Puech, A. Stauffer, and O. Zatsarinny, J. Phys. D **46** (2013) 334001
305. *Comparisons of sets of electron-neutral scattering cross sections and swarm parameters II. Helium and Neon*
L. L. Alves, M. C. Bordage, S. F. Biagi, L. C. Pitchford, O. Zatsarinny, K. Bartschat, G. J. M. Hagelaar, S. Pancheshnyi, C. M. Ferreira, V. Puech, W. L. Morgan, and A. V. Phelps, J. Phys. D **46** (2013) 334002
306. *Comparisons of sets of electron-neutral scattering cross sections and swarm parameters in noble gases III. Krypton and Xenon*
M. C. Bordage, S. F. Biagi, L. C. Pitchford, K. Bartschat, S. Chowdhury, G. J. M. Hagelaar, W. L. Morgan, V. Puech, and O. Zatsarinny, J. Phys. D **46** (2013) 334003

307. *Computational methods for electron-atom collisions in plasma applications*
K. Bartschat, J. Phys. D **46** (2013) 334004
308. *Coherence in multistate resonance-enhanced four-photon ionization of lithium atoms*
M. Schuricke, K. Bartschat, A. N. Grum-Grzhimailo, G. Zhu, J. Steinmann, R. Moshhammer, J. Ullrich, and A. Dorn, Phys. Rev. A **88** (2013) 023427
309. *Resonance Effects in two-photon double ionization of H_2 by femtosecond XUV laser pulses*
X. Guan, K. Bartschat, B.I. Schneider, and L. Koesterke, Phys. Rev. A **88** (2013) 043402
310. *Effects of numerical approximations in the treatment of short-pulse strong-field ionization of atomic hydrogen*
A.N. Grum-Grzhimailo, M.N. Khaerdinoy, and K. Bartschat, Phys. Rev. A **88** (2013) 055401
311. *Differential cross sections for low-energy elastic electron scattering from the CF_3 radical*
J. R. Brunton, L. R. Hargreaves, T. M. Maddern, S. J. Buckman, G. García, F. Blanco, O. Zatsarinny, K. Bartschat, D. B. Jones, G. B. da Silva, and M. J. Brunger, J. Phys. B **46** (2013) 245303
312. *Threshold alignment reversal and circularly polarized fluorescence in rotationally resolved H_2*
J.W. Maseberg, K. Bartschat, and T.J. Gay, Phys. Rev. Lett. **111** (2013) 253201
313. *Energy dependence of the $(e,2e)$ recoil/binary peak ratio across $He (2p^2)^1D$ and $(2s2p)^1P$ autoionizing levels*
B.A. deHarak, K. Bartschat, and N.L.S. Martin, Phys. Rev. A **89** (2014) 012702
314. *Benchmark calculation of total cross sections for ionization-excitation of helium*
O. Zatsarinny and K. Bartschat, (Fast Track Communication) J. Phys. B **47** (2014) 061001
315. *Electron-impact excitation of argon at intermediate energies*
O. Zatsarinny, Y. Wang, and K. Bartschat, Phys. Rev. A **89** (2014) 022706
316. *Time delays for attosecond streaking in photoionization of neon*
J. Feist, O. Zatsarinny, S. Nagele, R. Pazourek, J. Burgdörfer, X. Guan, K. Bartschat, and B.I. Schneider, Phys. Rev. A **89** (2014) 033417
317. *B-spline R-matrix-with-pseudostates calculations for electron-impact excitation and ionization of fluorine*
V. Gedeon, S. Gedeon, V. Lazur, E. Nagy, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **89** (2014) 052713
318. *Electron collisions with cesium atoms – benchmark calculations and application to modeling an excimer-pumped alkali laser*
O. Zatsarinny, K. Bartschat, N.Y. Babaeva, and M.J. Kushner, Plasma Sources Science and Technology **23** (2014) 035011
319. *Spin-exchange cross sections in low-energy electron collisions with one-electron ions*
K. Bartschat and H.R. Sadeghpour, The Astrophysical Journal **788** (2014) 69
320. *Complementary imaging of the nuclear dynamics in laser-excited diatomic molecular ions in the time and frequency domains*
M. Magrakvelidze, A. Kramer, K. Bartschat, and U. Thumm, J. Phys. B **47** (2014) 124003
321. *B-spline R-matrix-with-pseudostates calculations for electron-impact excitation and ionization of nitrogen*
Y. Wang, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **89** (2014) 062714
322. *Calculation of the polarization fraction and electron-impact excitation cross section for the $Cd^+ 5(p)^2P_{3/2}$ state*
C.J. Bostock, D.V. Fursa, I. Bray, and K. Bartschat, Phys. Rev. A **90** (2014) 012707
323. *Displacement effect in strong-field atomic ionization by an XUV pulse*
I.A. Ivanov, A.S. Kheifets, and K. Bartschat, J. Emmons, S.M. Buczek, E.V. Gryzlova, and A.N. Grum-Grzhimailo, Phys. Rev. A **90** (2014) 043401
324. *Alignment and pulse-duration effects in two-photon double ionization of H_2 by femtosecond XUV laser pulses*
X. Guan, K. Bartschat, B.I. Schneider, and L. Koesterke, Phys. Rev. A **90** (2014) 043416
325. *Annotation of Hans Bethe's paper, Zeitschrift für Physik **76**, 293 (1932), "Braking Formula for Electrons of Relativistic Speed"*
C.J. Fontes, C.J. Bostock, and K. Bartschat, Eur. J. Phys. H **5** (2014) 517
326. *Time-dependent computational methods for matter under extreme conditions*
B.I. Schneider, K. Bartschat, X. Guan, D. Feder, and L.A. Collins, Adv. Chem. Phys. **157** (2015) 195

327. *Kinematically complete study of low-energy electron-impact ionization of neon: Internormalized cross sections in three-dimensional kinematics*
X. Ren, S. Amami, O. Zatsarinny, T. Pflüger, M. Weyland, W.Y. Baek, H. Rabus, K. Bartschat, D. Madison, and A. Dorn, Phys. Rev. A **91** (2015) 032707
328. *Pulse-shape effects in ionization of atomic hydrogen by short-pulse XUV intense laser radiation: A sensitivity study*
K. Bartschat, J. Venzke, and A.N. Grum-Grzhimailo, Phys. Rev. A **91** (2015) 053404
329. *Interfering one-photon and two-photon ionization by femtosecond VUV pulses in the region of an intermediate resonance*
A.N. Grum-Grzhimailo, E.V. Gryzlova, E.I. Staroselskaya, J. Venzke, and K. Bartschat, Phys. Rev. A **91** (2015) 063418
330. *Polarization correlations for electron-impact excitation of Neon at 50 eV*
L. Hargreaves, R. Wright, M.A. Khakoo, O. Zatsarinny, K. Bartschat, Dipti, R. Srivastava, and A.D. Stauffer, J. Phys. B **48** (2015) 185201
331. *B-spline R-matrix with pseudostates calculations for electron collisions with aluminum*
V. Gedeon, S. Gedeon, V. Lazur, E. Nagy, O. Zatsarinny, and K. Bartschat, Phys. Rev. A **92** (2015) 052701
332. *Propensity for distinguishing two free electrons with equal energies in electron-impact ionization of helium*
X. Ren, A. Senftleben, T. Pflüger, K. Bartschat, O. Zatsarinny, J. Berakdar, J. Colgan, M.S. Pindzola, I. Bray, D.V. Fursa, and A. Dorn, Phys. Rev. A **92** (2015) 052707
333. *Numerical simulation of the double-to-single ionization ratio for the helium atom in strong laser fields*
Z. Chen, Y. Zheng, W. Yang, X. Song, J. Xu, L.F. DiMauro, O. Zatsarinny, K. Bartschat, T. Morishita, S.-F. Zhao, and C.D. Lin, Phys. Rev. A **92** (2015) 063427
334. *Time propagation of partial differential equations using the short iterative Lanczos method and finite-element discrete variable representation*
B.I. Schneider, X. Guan, and K. Bartschat, Adv. Quant. Chem. (2016), in press
335. *Non-perturbative B-spline R-matrix with pseudostates calculations for electron-impact ionization-excitation of helium to the $n = 3$ states of He^+*
O. Zatsarinny and K. Bartschat, Phys. Rev. A **93** (2016) in press
336. *Coherent control with a short-wavelength Free-Electron Laser*
K.C. Prince, ..., K. Bartschat, ... *et al.*, Nature Photonics (2016) in press

Invited Talks at International Conferences

1. *New aspects in the study of spin-dependent interactions in inelastic collisions*
vita-june2011.tex2nd International Symposium on *Polarization and Correlation in Electron–Atom Collisions*
July 25–26, 1983, in Münster (Germany).
2. *Electron scattering from heavy atoms*,
3rd International Symposium on *Polarization and Correlation in Electron–Atom Collisions*; August 1–2, 1985,
in Pasadena (California, USA).
3. *Electron scattering from atoms and ions*
CCP2-Meeting, September 9–10, 1985, in London (England).
4. *Collisional excitation of heavy atoms and ions*
International Workshop on the *Assessment of Atomic Data*; August 1–2, 1987, in Oxford (England).
5. *Atomic collision processes: what can we learn by using polarized collision partners?*
5th International Symposium on *Polarization and Correlation in Electron–Atom Collisions*
August 2–8, 1989, in New York (New York, USA).
6. *The theory of spin-dependent electron scattering: an overview*
Spring Meeting of the German and Austrian Physical Societies, March 11–15, 1991, in Freiburg (Germany).
7. *Positron scattering from alkalis and noble gases — suggestions for testing theoretical predictions*
5th International Positron Workshop, July 3–5, 1991, in Sydney (Australia).
8. *Recent developments in the theoretical treatment of spin-dependent electron–atom scattering*
6th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions and ($e,2e$)
Reactions*; July 18–20, 1991, in Adelaide (Australia).
9. *Spin-dependent electron–atom scattering: recent developments and challenges for the future*
International Conference on *Photon and Electron Collisions with Atoms and Molecules (PECAM I)*
July 7–10, 1992, in Rome (Italy).
10. *Spin-dependent electron-atom scattering — a detailed test of atomic collision theory*
Annual Meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP) of the American Physical
Society; May 17–19, 1993, in Reno (Nevada, USA).
11. *Elastic and inelastic positron scattering from alkali atoms*
6th International Positron Workshop, July 14–16, 1993, in Bielefeld (Germany).
12. *Recent developments in electron-atom close-coupling theory*
XVIII International Conference on the Physics of Electronic and Atomic Collisions (ICPEAC)
July 21–27, 1993, in Aarhus (Denmark).
13. *Recent developments in electron–alkali-atom scattering theory*
47th Gaseous Electronic Conference (GEC), October 18–21, 1994, in Gaithersburg (Maryland, USA).
14. *Spin-resolved alignment and orientation effects in atomic collisions*
Advanced Workshop on Atomic and Molecular Physics, February 13–15, 1995, in Canberra (Australia).
15. *Simultaneous ionization and excitation of atoms by electron impact*
Electron Impact Symposium, July 21–22, 1995, in Reno (Nevada, USA).
16. *Excitation of atoms by electron impact: Current status and future prospects*
International Conference on *Photon and Electron Collisions with Atoms and Molecules (PECAM II)*
July 21–24, 1996, in Belfast (Northern Ireland).
17. *Recent progress in the theory of electron–atom collisions*
49th Gaseous Electronic Conference (GEC), October 21, 1996, at Argonne National Laboratory (Illinois, USA).
18. *The R-matrix with pseudo-states method*
Workshop on *New Developments in Electron–Atom Scattering*
October 24–26, 1996, at the Institute for Theoretical Atomic and Molecular Physics at Harvard University in
Cambridge (Massachusetts, USA).

19. *Recent progress in the theory of electron–atom collisions*
Joint Meeting of the American Physical Society and the American Association of Physics Teachers with the Canadian Association of Physicists and the Sociedad Mexicana de Fisica
April 18–21, 1997, in Washington, D.C. (USA).
20. *Recent progress in the theory of electron–impact excitation and ionization*
9th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions*
July 31–August 3, 1997, in Rome (Italy).
21. *Electron–atom collisions: current status and future prospects*
International Symposium on *Polarization and Correlation in Atomic Collision Complexes*
November 14–15, 1997, in Bielefeld (Germany).
22. *Recent developments in the theory of electron–ion collisions*
APS Topical Conference on *Atomic Processes in Plasmas*, March 22–26, 1998, in Auburn (Alabama, USA).
23. *Complete experiments in electron–atom collisions: benchmarks for atomic collision theory*
Hans-Kleinpoppen Symposium on *Complete Experiments*, July 13–14, 1998, in Lucca (Italy).
24. *Polarization, alignment, and orientation in electron–atom collisions: benchmarks for atomic collision theory*
16th International Conference on Atomic Physics; August 3–7, 1998, in Windsor (Ontario, Canada).
25. *Benchmark studies in electron-impact excitation of atoms*
International Symposium on *Supercomputing, Collision Processes, and Applications*
September 14–16, 1998, in Belfast (Northern Ireland).
26. *Ionization plus excitation in electron–atom collisions*
International Conference on *Coincidence Spectroscopy*; September 23–26, 1998, in Brest (France).
27. *Electron collisions with atoms and ions: how theory can guide, check, complement, and extend experiment*
Workshop on *The Role of Theory in Atomic, Molecular and Optical Physics*
February 26–27, 1999, at the Institute for Theoretical Atomic and Molecular Physics at Harvard University in Cambridge (Massachusetts, USA).
28. *Benchmark calculations for electron impact excitation and ionization of atoms*
Centennial Meeting of the American Physical Society, March 20–26, 1999, in Atlanta (Georgia, USA).
29. *Recent progress in the theory of electron collisions with noble gases*
10th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions*
July 29–August 1, 1999, in Beijing (China).
30. *Computer simulations of excitation, ionization, and ionization–excitation in electron–atom collisions*
Workshop on *Computational Challenges in Atomic and Molecular Physics*
May 4–6, 2000, at the Institute for Theoretical Atomic and Molecular Physics at Harvard University in Cambridge (Massachusetts, USA).
31. *The three-body Coulomb problem: history, current status, and future challenges*
Workshop on *Computational Methods for Few-Body Dynamical Systems*
November 15–17, 2000, at the National Institute for Standards and Technology, in Washington, D.C. (USA).
32. *R-matrix with pseudo-states calculations for electron impact excitation and ionization*
Workshop on *Computational Atomic Physics*
January 11–12, 2001, Rollins College, in Winter Park (Florida, USA).
33. *Simultaneous ionization–excitation: a challenge for theory and experiment*
11th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions*
July 26–28, 2001, in Rolla (Missouri, USA).
34. *Benchmark calculations for electron collisions with complex atoms*
3rd International Conference on *Atomic and Molecular Data*
April 24–27, 2002, in Gatlinburg (Tennessee, USA).
35. *Recent progress in the simultaneous ionization–excitation of quasi-two-electron systems*
International Conference on *Electron and Photon Impact Ionization and Related Topics*
July 18–20, 2002, in Metz (France).

36. *Simultaneous ionization–excitation: (e,γ) , $(e,2e)$, $(e,e\gamma)$ and $(e,2e\gamma)$*
12th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions*
July 31–August 2, 2003, in Frankfurt (Germany).
37. *Calculation of electron–atom collision cross sections for lighting applications*
56th Gaseous Electronic Conference (GEC), October 21–24, 2003, in San Francisco (California, USA).
38. *A hybrid DWBA–R-matrix approach for charged-particle impact ionization of atoms and ions*
Joint session of the 13th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions* and the International Symposium on *$(e,2e)$, Double Photoionization, and Related Topics*
July 28–30, 2005, in Buenos Aires (Argentina).
39. *High-precision cross sections for electron–atom collisions in laser and lighting applications*
58th Gaseous Electronic Conference (GEC), October 16–20, 2005, in San Jose (California, USA).
40. *A B-spline R-matrix method with non-orthogonal orbitals for accurate calculations of atomic bound and continuum processes*
Symposium on *Computations in Quantum Many-Body Physics*, June 29–30, 2006, in Santa Fe (New Mexico, USA).
41. *High-precision cross sections for low-energy electron–atom collisions*
5th International Conference on *Atomic and Molecular Data and Their Applications (ICAMDATA)*,
October 15–19, 2006, in Paris (France).
42. *High-precision calculations of atomic bound and continuum processes*
Workshop on *Physics at EBIT at Advanced Research Light Sources*,
March 8–12, 2007, in Shanghai (China).
43. *High-precision calculations for electron-impact excitation and ionization of complex atoms*
38th Annual Meeting of the Division of Atomic, Molecular, and Optical Physics,
June 5–9, 2007, in Calgary (Canada).
44. *Ionization of noble gases by charged-particle impact*
Workshop on *Cold Antimatter Plasmas and Application to Fundamental Physics*,
February 20–22, 2008, in Okinawa (Japan).
45. *Electron-impact ionization-excitation of atoms.*
International Conference on *Many particle spectroscopy of atoms, molecules, clusters and surfaces*,
June 30– July 2, 2008, in Paris (France).
46. *Electron-impact excitation and ionization of complex atoms*
XXVIth International Conference on *Photonic, Electronic, and Atomic Collisions (ICPEAC XXVI)*,
July 22–28, 2009, in Kalamazoo (Michigan, USA)
47. *Multi-photon single and double ionization of complex atoms by ultrashort intense laser pulses*
Workshop on *Quantum Dynamic Imaging*
October 19–23, 2009, in Montreal (Quebec, Canada)
48. *Benchmark calculations of atomic data for plasma and discharge applications*
16th Gaseous Electronics Meeting
January 31–February 3, 2010, in Batemans Bay, New South Wales (Australia)
49. *Benchmark calculations of atomic data for plasma and lighting applications*
20th European Conference on *Atomic and Molecular Processes in Ionized Gases*
July 14–17, 2010, in Novi Sad (Serbia)
50. *Benchmark calculations of atomic data for plasma applications*
4th International Conference on *Plasma-Nanotechnology & Science*
March 10-12, 2011, in Takayama (Japan)
51. *Breakup of the H₂ molecule by XUV laser pulses: a time-dependent treatment in prolate-spheroidal coordinates*
Symposium on *Chasing Attosecond Dynamics of Atoms and Molecules with Electrons, Ions and Lasers*
April 18, 2011, in Manhattan (Kansas, USA)
52. *Breakup of the H₂ molecule by xuv laser pulses: A time-dependent treatment in prolate spheroidal coordinates*
International Workshop on *Intense-Field, Short-Wavelength Atomic and Molecular Processes (I-SWAMP)*
July 21-23, 2011, in Dublin (Ireland).

53. *Recent progress in calculations of ionization and ionization-excitation*
Joint session of the 13th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions* and the International Symposium on *(e,2e), Double Photoionization, and Related Topics*
August 4-6, 2011, in Dublin (Ireland).
54. *Computational methods for electron-atom collisions*
65th Gaseous Electronic Conference
November 15–18, 2011, in Salt Lake City (UT).
55. *Benchmark calculations of atomic collision processes*
March Meeting of the American Physics Society
February 27– March 2, 2012, in Boston (Massachusetts, USA).
56. *Non-perturbative calculations of electron-impact ionization and ionization-excitation using the B-spline R-matrix with pseudo-states approach*
International Conference on *Many-Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces*
August 27– September 1, 2012, in Berlin (Germany).
57. *GEC Foundation Talk: Electron collisions with atoms, ions, and molecules: experiment, theory, and applications*
65th Gaseous Electronic Conference
October 22–26, 2012, in Austin (TX).
58. *Computational Methods for Electron-Atom Collisions in Plasma Applications*
Annual Meeting of the Division of Atomic, Molecular, and Optical Physics of the American Physical Society
June 3–7 2013, in Quebec City (Quebec, Canada).
59. *Benchmark Calculations for Single and Double Ionization of Atoms and Small Molecules by Short-Pulse Intense Laser Fields*
3rd Russian-German Workshop on *Correlation and Polarization Phenomena in Ionization of Dilute Species by XUV and X-ray Radiation*
December 5–6 2013, in Hamburg (Germany).
60. *Benchmark Calculations for Single and Double Ionization of Atoms and Small Molecules by Short-Pulse Intense Laser Fields*
International Conference on *Many-Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces*
July 16–18, 2014, in Metz (France).
61. *Benchmark Calculations for Electron Collisions with Complex Atoms and Ions*
9th International Conference on *Atomic and Molecular Data and Their Applications (ICAMDATA)*,
September 21–25, 2014, in Jena (Germany).
62. *Non-Perturbative Calculations for Electron-Impact Ionization of Complex Atoms*
15th International Symposium on *Correlation and Polarization in Electronic and Atomic Collisions* and the International Symposium on *(e,2e), Double Photoionization, and Related Topics*
August 1-3, 2015, in San Sebastian (Spain).

Colloquia and Seminars

1. *Electron scattering from heavy atoms*
June 4, 1984, University of Münster (Germany)
2. *Electron scattering from and photoionisation of heavy atoms*
November 19, 1985, The Queen's University of Belfast (Northern Ireland)
3. *Electron scattering from and photoionisation of heavy atoms*
November 20, 1985, University College London (England)
4. *R-matrix and distorted-wave calculations for electron scattering from heavy atoms*
March 3, 1986, York University Toronto (Canada)
5. *Excitation and ionisation of atoms by electron and photon impact*
January 13, 1988, University of Freiburg (Germany)
6. *Excitation and ionisation of atoms by electron and photon impact*
February 26, 1988, Laval University, Quebec City (Canada)
7. *Excitation and ionisation of atoms by electron and photon impact*
February 29, 1988, National Bureau of Standards Gaithersburg (Maryland, USA)
8. *Calculation of atomic data for plasma physics*
March 19, 1988, University of Hannover (Germany)
9. *Excitation and ionisation of atoms by electron and photon impact*
May 26, 1988, University of Nebraska–Lincoln (USA)
10. *Excitation and ionization of atoms by interaction with electrons, positrons, protons and photons*
June 27, 1988, University of Münster (Germany)
11. *Excitation and ionisation of atoms by electron and photon impact*
February 18, 1989, University of Missouri–Rolla (USA)
12. *Atomic collision processes: Looking beyond cross sections*
February 24, 1989, University of Nebraska–Lincoln (USA)
13. *Atomic collision processes: Looking beyond cross sections*
March 22, 1990, Louisiana State University (Baton Rouge, Louisiana, USA)
14. *Atomic collision processes: Looking beyond cross sections*
March 29, 1990, University of Nevada–Reno (USA)
15. *Atomic collision processes: General theory and numerical methods*
February 28, 1991, York University Toronto (Canada)
16. *Photoionization of atomic barium from ground and excited states*
June 11, 1991, University of Hannover (Germany)
17. *Atomic collision processes: how good is the theory?*
November 27, 1991, ITAMP, Harvard Smithsonian Institute Center for Astrophysics, Cambridge (Massachusetts, USA)
18. *Quantum defect theory and its application to photoionization and electron impact ionization of atoms and ions*
April 15, 1992, Drake University (Des Moines, Iowa, USA)
19. *Photo- and electron impact ionization of complex atoms*
June 22, 1992, University of Frankfurt (Germany)
20. *Photo- and electron impact ionization of complex atoms*
July 27, 1992, University of Kaiserslautern (Germany)
21. *Atomic collisions: a submicroscopic billiard game? (Stalnaker Lecture)*
October 7, 1992, Drake University (Des Moines, Iowa, USA)
22. *Spin-dependent electron–atom scattering: recent developments and challenges for the future*
November 12, 1992, JILA, University of Colorado–Boulder (USA)
23. *Spin-resolved alignment and orientation effects in atomic collisions*
March 21, 1995, University of Windsor (Canada)

24. *Complete experiments in electron–atom collisions*
October 19, 1995, University of Maynooth (Ireland)
25. *Complete experiments in electron–atom collisions*
November 8, 1995, University of Newcastle (England)
26. *Complete experiments in electron–atom collisions*
November 22, 1995, The Queen’s University of Belfast (Northern Ireland)
27. *Complete experiments in electron–atom collisions*
December 6, 1995, University of Münster (Germany)
28. *Complete experiments in electron–atom collisions*
December 20, 1995, University of Utrecht (The Netherlands)
29. *Complete experiments in electron–atom collisions*
March 27, 1996, Australian National University, Canberra (Australia)
30. *Complete experiments in electron–atom collisions*
May 9, 1996, University of Western Australia, Perth (Australia)
31. *Excitation, ionization, and simultaneous excitation–ionization of helium atoms*
May 10, 1996, Murdoch University, Perth (Australia)
32. *Electron–atom collisions* (three guest lectures)
May 16–20, Griffith University, Brisbane (Australia)
33. *Excitation, ionization, and simultaneous excitation–ionization of helium atoms*
May 17, 1996, Griffith University, Brisbane (Australia)
34. *Complete experiments in electron–atom collisions*
November 13, 1996, University of Nebraska–Lincoln (USA)
35. *Complete experiments in electron–atom collisions*
February 27, 1997, University of Wisconsin–Madison (USA)
36. *Electron–atom scattering: Current status and future prospects*
March 14, 1997, University of Missouri–Rolla (USA)
37. *New developments in the calculation of atomic data for excitation and ionization by electron and photon impact*
June 30, 1997, University of Hannover (Germany)
38. *New developments in the calculation of atomic data for electron impact excitation and ionization*
July 2, 1997, University of Greifswald (Germany)
39. *The R-matrix method in atomic collision theory*
November 5, 1997, Moscow State University (Russia)
40. *Complete experiments in electron–atom collisions*
November 6, 1997, Moscow State University (Russia)
41. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
December 15, 1998, University of Bochum (Germany)
42. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
April 9, 1999, University of Texas–Austin (USA)
43. *Computer simulations of excitation, ionization, and ionization–excitation in electron–atom collisions*
May 24, 2000, Moscow State University (Russia)
44. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
September 18, 2000, University of Iowa (USA)
45. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
November 13, 2000, Naval Research Laboratory (Washington, D.C., USA)
46. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
February 23, 2001, University of Northern Iowa (Cedar Falls, Iowa, USA)
47. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
March 12, 2001, Illinois State University (Normal, Illinois, USA)

48. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
March 30, 2001, Old Dominion University (Norfolk, Virginia, USA)
49. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
September 13, 2001, University of Missouri–Rolla (Rolla, Missouri, USA)
50. *Electron collisions with atoms and ions — recent developments in theory, experiment, and computer simulations*
November 20, 2001, Kansas State University (Manhattan, Kansas, USA)
51. *Simultaneous ionization–excitation: a challenge for theory and experiment*
August 26, 2002, ITAMP, Harvard Smithsonian Institute Center for Astrophysics, Cambridge (Massachusetts, USA)
52. *Electron–atom collisions: a solved problem ?*
December 9, 2002, University of Connecticut (Storrs, USA)
53. *Electron–atom collisions: a solved problem ?*
January 28, 2003, Griffith University (Brisbane, Australia)
54. *Electron–atom collisions: a solved problem ?*
February 11, 2003, Australian National University (Canberra, Australia)
55. *Electron–atom collisions: a solved problem ?*
February 20, 2003, Flinders University (Adelaide, Australia)
56. *Electron–atom collisions: a solved problem ?*
April 10, 2003, The University of Western Australia (Adelaide, Australia)
57. *Recent developments in simultaneous ionization–excitation*
May 9, 2003, The University of Western Australia (Adelaide, Australia)
58. *Electron–atom collisions: a solved problem ?*
June 23, 2003, University of Kaiserslautern (Germany)
59. *Electron–atom collisions: a solved problem ?*
June 25, 2003, University of Münster (Germany)
60. *Simultaneous ionization–excitation of quasi-two-electron targets*
July 8, 2003, The Queen’s University of Belfast (Northern Ireland)
61. *Wavepacket calculations and charge-cloud simulations for excitation and ionization by particle and photon impact*
April 14, 2004, University of Northern Iowa (Cedar Falls, Iowa, USA)
62. *Excitation and ionization by electron and photon impact: where are we now, and where are we going ?*
May 4, 2004, University of North Texas (Denton, Texas, USA)
63. *B-spline R-matrix calculations for electron collisions with noble gases*
June 23, 2004, University of Kaiserslautern (Germany)
64. *B-spline R-matrix calculations for electron–atom collisions*
June 26, 2004, University of Münster (Germany)
65. *The B-spline R-matrix method: recent results for electron and photon collisions with atoms and ions*
July 8, 2005, University of Kaiserslautern (Germany)
66. *Electron-impact ionization of atoms: beyond $(e,2e)$ on H*
July 11, 2005, University of Frankfurt (Germany)
67. *Electron-impact ionization of atoms: beyond $(e,2e)$ on H*
July 13, 2005, Max-Planck Institute for Nuclear Physics, Heidelberg (Germany)
68. *High-precision cross sections for electron–atom collisions in laser and lighting applications*
September 29, 2005, University of Missouri–Rolla (Rolla, Missouri, USA)
69. *Benchmark calculations of atomic data using the R-matrix method*
November 17, 2005, National Institute for Standards and Technology (Gaithersburg, Maryland, USA)
70. *Benchmark calculations for electron collision cross sections for laser and lighting applications*
July 7, 2006, University of Kaiserslautern (Germany)

71. *High-Precision Cross Sections for Low-Energy Electron-Atom Collisions: Critical Ingredients for Modeling Plasmas, Lasers, Stars, and the Atmosphere*
March 16, 2007, Australian National University, Canberra (Australia)
72. *High-Precision Cross Sections for Low-Energy Electron-Atom Collisions: Critical Ingredients for Modeling Plasmas, Lasers, Stars, and the Atmosphere*
March 19, 2007, Flinders University of South Australia, Adelaide (Australia)
73. *High-Precision Cross Sections for Low-Energy Electron-Atom Collisions: Critical Ingredients for Modeling Plasmas, Lasers, Stars, and the Atmosphere*
March 22, 2007 The University of Western Australia, Perth (Australia)
74. *High-precision calculations of atomic bound and continuum processes*
April 23, 2007, Drake University (Des Moines, Iowa, USA)
75. *Controlling the angular distribution of atomic photo-electrons in the region of laser-induced continuum structure in the femtosecond time domain*
July 11, 2007, Max-Planck Institute for Nuclear Physics, Heidelberg (Germany)
76. *Ultrashort intense laser-atom interactions*
July 11, 2007, Bothe Colloquium at the Max-Planck Institute for Nuclear Physics, Heidelberg (Germany)
77. *High-Precision Cross Sections for Low-Energy Electron-Atom Collisions: Critical Ingredients for Modeling Plasmas, Lasers, Stars, and the Atmosphere*
July 18, 2007, Max-Planck Institute for Plasma Physics, Greifswald (Germany)
78. *High-Precision Cross Sections for Low-Energy Electron-Atom Collisions: Critical Ingredients for Modeling Plasmas, Lasers, Stars, and the Atmosphere*
July 18, 2007, Max-Planck Institute for Plasma Physics, Greifswald (Germany)
79. *Benchmark Calculations of Atomic Data for Plasma Applications*
June 27, 2008, Max-Planck Institute for Plasma Physics, Greifswald (Germany)
80. *Benchmark Calculations of Atomic Data for Plasma Applications*
July 18, 2008, University of Kaiserslautern (Germany)
81. *Few-Cycle Intense Laser Interactions with Complex Atoms*
March 16, 2009, Los Alamos National Laboratory (Los Alamos, New Mexico, USA)
82. *Few-Cycle Intense Laser Interactions with Complex Atoms*
April 3, 2009, University of Kentucky (Lexington, Kentucky, USA)
83. *Single and Double Ionization of Atoms in Short-Pulse Intense Laser Fields*
January 22, 2010, Griffith University, Brisbane (Australia)
84. *Benchmark Calculations of Atomic Data for Plasma and Discharge Applications*
February 12, 2010, Australian National University, Canberra (Australia)
85. *Benchmark Calculations of Atomic Data for Plasma and Discharge Applications*
February 15, 2010, Swinburne University of Technology, Melbourne (Australia)
86. *Benchmark Calculations of Atomic Data for Plasma and Discharge Applications*
February 16, 2010, University of Melbourne, Melbourne (Australia)
87. *Single and Double Ionization of Atoms in Short-Pulse Intense Laser Fields*
February 26, 2010, University of Adelaide, Adelaide (Australia)
88. *Single and Double Ionization of Atoms in Short-Pulse Intense Laser Fields*
April 21, 2010, Curtin University of Technology, Perth (Australia)
89. *Single and Double Ionization of Atoms in Short-Pulse Intense Laser Fields*
June 14, 2010, University of Freiburg (Germany)
90. *Benchmark Calculations of Atomic Data for Plasma and Discharge Applications*
June 17, 2010, University of Fribourg (Switzerland)
91. *Calculations of Atomic Data for Plasma Applications*
July 18, 2010, Max-Planck Institute for Plasma Physics, Greifswald (Germany)

92. *Single and Double Ionization of Atoms in Short-Pulse Intense Laser Fields*
July 26, 2010, Max-Planck Institute for Nuclear Physics, Heidelberg (Germany)
93. *Single and Double Ionization of Atoms and Molecules by Short-Pulse Intense Lasers and Charged-Particle Impact*
April 7, 2011, Missouri University of Science and Technology, Rolla (Missouri, USA)
94. *Calculations of Atomic Data for Plasma Applications*
July 15, 2011, Ruhr-Universität, Bochum (Germany)
95. *Breakup of the Hydrogen Molecule by Short XUV Laser Pulses*
July 18, 2011, Goethe-Universität, Frankfurt (Germany)
96. *Single and Double Ionization of Atoms and Molecules by Short-Pulse Intense Lasers and Charged-Particle Impact*
October 19, 2011, Truman State University, Kirksville (Missouri, USA)
97. *Benchmark Calculations of Atomic Collision Processes*
April 13, 2012, Auburn University, Auburn (Alabama, USA)
98. *Effects of autoionizing states on two-photon double ionization of the H_2 molecule*
July 8, 2013, Goethe-Universität, Frankfurt (Germany)
99. *Benchmark Calculations of Atomic Collision Processes*
February 21, 2014, Harvard Smithsonian Center for Astrophysics, Cambridge (Massachusetts, USA)
100. *Benchmark Calculations of Atomic Collision Processes*
April 9, 2014, University of Western Australia, Perth (Australia)
101. *Computational methods for few-cycle intense-field laser-atom and laser-molecule interactions*
April 10, 2014, University of Western Australia, Perth (Australia)
102. *Benchmark Calculations of Atomic Collision Processes*
May 14, 2014, Swinburne University, Melbourne (Australia)
103. *Benchmark Calculations of Atomic Collision Processes*
May 22, 2014, Australian National University, Canberra (Australia)
104. *Benchmark Calculations of Atomic Collision Processes*
June 4, 2014, Griffith University, Brisbane (Australia)
105. *Benchmark Calculations of Atomic Collision Processes*
June 12, 2014, James Cook University, Townsville (Australia)

Professional References

Professor N.O. Andersen
Niels Bohr Institute
Oersted Laboratory
Universitetsparken 5
DK-2100 Copenhagen
Denmark
e-mail: noa@science.ku.dk

Professor I. Bray
Institute of Theoretical Physics
Curtin University of Technology
GPO Box U1987
Perth, WA 6845, Australia
e-mail: i.bray@curtin.edu.au

Professor T.J. Gay
Department of Physics and Astronomy
University of Nebraska–Lincoln
Lincoln, Nebraska 68588-0111
USA
e-mail: tgay1@unl.edu

Professor D.H. Madison
Physics Department
Missouri University of Science & Technology
Rolla, Missouri 65401
USA
e-mail: madison@mst.edu

Professor K. Blum
Institute für Theoretische Physik I
Universität Münster
Wilhelm-Klemm-Str. 9
D-48149 Münster
Germany
e-mail: km-blum@web.de

Professor P.G. Burke
Department of Appl. Math. & Theor. Physics
The Queen's University of Belfast
Belfast BT7 1NN
Northern Ireland
e-mail: p.burke@qub.ac.uk

Professor J.H. Macek
Theoretical Physics
University of Tennessee
Knoxville, Tennessee 37996-1501
USA
e-mail: jmacek@utk.edu

Dr. B.I. Schneider
Applied & Computational Mathematics
National Institute of Standards and Technology
Arlington, Virginia 22230
USA
e-mail: barry.schneider@nist.gov