

Andrei Derevianko

Physics Department, University of Nevada, Reno, NV 89557, USA
(775) 784-6039 (office) (775) 784-1398 (fax)
andrei@unr.edu <http://wolfweb.unr.edu/homepage/andrei/tap.html>

EXPERIENCE

Associate Professor <i>University of Nevada, Reno</i>	July 2006 - present
Assistant Professor <i>University of Nevada, Reno</i>	Jan. 2001- June 2006
Postdoctoral Research Associate <i>Harvard University/ITAMP</i>	1999-2000
Postdoctoral Research Associate <i>University of Notre Dame</i>	1996-1999

EDUCATION

Doctorate of Philosophy in Physics <i>Auburn University</i>	1996
Master of Science in Physics and Applied Mathematics <i>summa cum laude</i> <i>Moscow Institute of Physics and Technology (FizTech)</i>	1992

AWARDS

Fellow of the American Physical Society <i>American Physical Society</i>	2008
Fulbright scholarship to Australia <i>U.S. Department of State</i>	2007
Mousel-Feltner award for excellence in research/creative activity <i>University of Nevada</i>	2006
Precision measurement grant <i>U.S. National Institute of Standards and Technology Department of Commerce</i>	2003
Graduate student award for promise in research <i>Auburn University</i>	1995

MEDIA COVERAGE

Portable precision: A new type of atomic clock <i>American Physical Society</i>	
Changing the clocks, and it's about time <i>the Australian</i>	
Atomic clock can shrink by `magic' by Bob Beale <i>University of New South Wales, Australia</i>	
Why aluminum should replace cesium as the standard of time <i>physics arXiv blog</i>	
Philip Ball asks if you can spare him 429 228 004 229 952 oscillations of your time <i>Chemistry World magazine, October 2008</i>	
An accurate clock arrives at last <i>The Inquirer (British tabloid)</i>	
Researcher creates world's most accurate atomic clock by John Trent <i>Nevada News</i>	
Quicksilver clock could `revolutionize' physics <i>Discovery Channel News</i>	
Fulbrights offer unique experiences to faculty and grads by Zanny Marsh <i>Nevada News</i>	
His team changed the world's time <i>Silver and Blue magazine, Winter 2007</i>	

Американские ученые поправили самые точные часы

Lenta.ru (Russia)

L'horloge atomique craint la chaleur... by Pascal Belotti

Futura Sciences (France)

Interview with KOH radio

Interview with News 4 (greater Reno area NBC affiliate)

Physicists make atomic clock breakthrough by Ben Hoffman

Nevada News

Atomic clocks feel the heat by Belle Dume

physicsworld.com and also Physics World magazine

PATENTS

Microwave frequency optical lattice clock

K. Beloy, A. Derevianko, V. A. Dzuba, and V. V. Flambaum

U.S. Patent Application No. 61/080,117; similar patent application was filed in Australia (2008)

REFEED PUBLICATIONS

- Over 80 publications (including 12 prestigious Physical Review Letters and 10 rapid communications in Physical Review)
- Total number of citations: about 1,500
- In 2008 my papers have been cited about 250 times.
- H-index: 22

REVIEWS

1. **Theoretical overview of atomic parity violation. Recent developments and challenges**, A. Derevianko and S. G. Porsev, *Eur. Phys. J. A* 32 (4), 517(2007).
2. **Accurate evaluation of parameters of lattice clocks**, A. Derevianko and S. G. Porsev, *invited book chapter in Optical Atomic Clocks (in press)*.
3. **Colloquium: physics of new clocks**, A. Derevianko, *Rev. Mod. Phys.* (invited review, in preparation).
4. **CP-violating polarizabilities of atoms and molecules**, A. Derevianko and M. G. Kozlov, *invited book chapter in Advances in Atomic Physics (in preparation)*

REGULAR REFEREED ARTICLES

5. **Precision determination of electroweak coupling from atomic parity violation and implications for particle physics**, S. G. Porsev, K. Beloy and A. Derevianko, *under review, Phys. Rev. Lett.* (2009)
6. **Micromagic clock: microwave clock based on atoms in an engineered optical lattice**, K. Beloy, A. Derevianko, V. A. Dzuba, V. V. Flambaum, *accepted for publication, in press, Phys. Rev. Lett.* (2009).
7. **Application of B-splines to determining eigen-spectrum of Feshbach molecules**, A. Derevianko, E. Luc-Koenig, F. Masnou-Seeuws, *accepted for publication, in press, Can. J. Phys.* (2009)
8. **Dispelling the curse of the neutron skin in atomic parity violation**, B. A. Brown, A. Derevianko, V. V. Flambaum, *accepted for publication, in press, Phys. Rev. C* (2009)
9. **AC Stark shift of the Cs microwave atomic clock transitions**, P. Rosenbusch, S. Ghezali, V. A. Dzuba, V. V. Flambaum, K. Beloy, A. Derevianko, *Phys. Rev. A* 79, 013404 (2009)
10. **Magic frequencies for cesium primary frequency standard**, V. V. Flambaum, V. A. Dzuba, A. Derevianko, *Phys. Rev. Lett.* 101, 220801 (2008)
11. **Second-order effects on the hyperfine structure of P states of alkali-metal atoms**, K. Beloy and A. Derevianko, *Phys. Rev. A* 78, 032519 (2008)
12. **Convergence of all-order many-body methods: coupled-cluster study for Li**, A. Derevianko, S. G. Porsev, K. Beloy, *Phys. Rev. A* 78, 010503(R) (2008),
13. **Nuclear magnetic octupole moment and the hyperfine structure of the 5D states of the Ba⁺ ion**, K. Beloy, A. Derevianko, V. A. Dzuba, G. T. Howell, B. B. Blinov, and E. N. Fortson, *Phys. Rev. A* 77, 052503 (2008)

14. **Trapping of neutral mercury atoms and prospects for optical lattice clocks**, H. Hachisu, K. Miyagishi, S. G. Porsev, A. Derevianko, V. D. Ovsiannikov, V. G. Pal'chikov, M. Takamoto and H. Katori, *Phys. Rev. Lett.* **100**, 053001 (2008)
15. **Relativistic many-body calculation of energies, lifetimes, hyperfine constants, and polarizabilities in ^7Li** , W. R. Johnson, U. I. Safronova, A. Derevianko, and M. S. Safronova, *Phys. Rev. A* **77**, 022510 (2008).
16. **Application of the dual-kinetic-balance sets in the relativistic many-body problem of atomic structure**, K. Beloy, and A. Derevianko, *Comp. Phys. Comm.* **179** 310-319 (2008)
17. **Hyperfine structure of the metastable $^3\text{P}_2$ state of alkaline-earth atoms as an accurate probe of nuclear magnetic octupole moments**, K. Beloy, A. Derevianko, and W. R. Johnson, *Phys. Rev. A* **77**, 012512 (2008).
18. **Optical quenching of metastable magnesium**, N. Rehbein, T.E. Mehlstaubler, J. Keupp, K. Moldenhauer, E. M. Rasel, W. Ertmer, V. Michels, A. Douillet, S. G. Porsev, A. Derevianko, C. F. Fischer, G. Tachiev, and V. G. Pal'chikov, *Phys. Rev. A* **76**, 043406 (2007).
19. **Long-range forces between two excited mercury atoms and associative ionization**, J. S. Cohen and A. Derevianko, *Phys. Rev. A* **76**, 012706 (2007).
20. **Relativistic coupled-cluster single-double method applied to alkali-metal atoms**, R. Pal, M.S. Safronova, W.R. Johnson, A. Derevianko, S. G. Porsev, *Phys. Rev. A* **75**, 042515 (2007)
21. **High-accuracy calculation of black-body radiation shift in ^{133}Cs primary frequency standard**, K. Beloy, U. I. Safronova and A. Derevianko, *Phys. Rev. Lett.* **97**, 040801 (2006).
22. **Proposal for a sensitive search for electric dipole moment of electron with matrix-isolated radicals**, M. Kozlov and A. Derevianko, *Phys. Rev. Lett.* **97**, 063001 (2006).
23. **Quantum computing with magnetic atoms in optical lattices of reduced periodicity**, B. Ravaine, A. Derevianko, and P. R. Berman, *Phys. Rev. A* **74**, 022330 (2006)
24. **Multipolar theory of black-body radiation shift of atomic energy levels and its implications for optical lattice clocks**, S. G. Porsev and A. Derevianko, *Phys. Rev. A* **74**, 020502(R) (2006)
25. **Inclusion of triple excitations in the relativistic coupled-cluster formalism and calculation of Na properties**, S. G. Porsev and A. Derevianko, *Phys. Rev. A* **73**, 012501 (2006)
26. **High-accuracy calculations of dispersion coefficients C_6 , C_8 and C_{10} for alkaline-earth atoms**, S. G. Porsev and A. Derevianko, *Journal of Experimental and Theoretical Physics*, **102**, No. 2, pp. 195-205 (2006). [original text in Russian *Zhurnal Eksperimentalnoi i Teoreticheskoi Fiziki*, **129**, No. 2, pp. 227-238 (2006)].
27. **Revised Huang-Yang multipolar pseudopotential**, A. Derevianko, *Phys. Rev. A* **72**, 044701 (2005).
28. **Molecular CP-violating magnetic moment**, A. Derevianko and M. Kozlov, *Phys. Rev. A* **72**, 040101(R) (2005)
29. **Atomic CP-violating polarizability**, B. Ravaine, M. Kozlov and A. Derevianko, *Phys. Rev. A* **72**, 012101 (2005)
30. **Marked influence of the nature of chemical bond on CP-violating signature in molecular ions HBr^+ and HI^+** , B. Ravaine, S. G. Porsev, and A. Derevianko, *Phys. Rev. Lett* **94**, 013001 (2005)
31. **Dressing lines and vertices in calculations of matrix elements with the coupled-cluster method and determination of Cs atomic properties**, A. Derevianko and S. G. Porsev, *Phys. Rev. A* **71**, 032509 (2005)
32. **Quantum computing with magnetically-interacting atoms**, A. Derevianko and C. Cannon, *Phys. Rev. A* **70**, 062319 (2004). Also at *Virtual Journal of Quantum Information* **5** (2005).
33. **Effects of confinement on the permanent electric-dipole moment of Xe atoms in liquid Xe**, B. Ravaine and A. Derevianko, *rapid communication, Phys. Rev. A* **69**, 050101(R) (2004)
34. **Complete fourth-order relativistic many-body calculations for atoms**, C. Cannon and A. Derevianko, *rapid communication, Phys. Rev. A* **69**, 030502(R) (2004)
35. **Possibility of an ultra-precise optical clock using the 6^1S_0 - 6^3P_0 transition in $^{171,173}\text{Yb}$ atoms held in an optical lattice**, S. G. Porsev, A. Derevianko, and E. N. Fortson, *rapid communication, Phys. Rev. A* **69**, 021403(R) (2004).
36. **Relaxation effect and radiative corrections in many-electron atoms**, A. Derevianko, B. Ravaine, and W.R. Johnson, *Phys. Rev. A* **69**, 054502 (2004)
37. **Hyperfine quenching of the metastable $^3\text{P}_{0,2}$ states in divalent atoms**, S. G. Porsev and A. Derevianko, *Phys. Rev. A* **69**, 042506 (2004)

38. **Off-diagonal hyperfine interaction between the $6p_{1/2}$ and $6p_{3/2}$ levels in ^{133}Cs** , W. R. Johnson, H. C. Ho, C. E. Tanner, A. Derevianko, *Phys. Rev. A* **70**, 014501 (2004)
39. **Dipole polarizabilities of excited alkali-metal atoms and long range interactions of ground and excited state alkali-metal atoms with helium atoms**, Ch. Zhu, A. Dalgarno, S. G. Porsev, and A. Derevianko, *Phys. Rev. A* **70**, 032722 (2004) .
40. **Ultracold collision properties of metastable alkaline-earth atoms**, A. Derevianko, S. G. Porsev, S. Kotochigova, E. Tiesinga, P. S. Julienne, *Phys. Rev. Lett.*, **90**, 063002 (2003)
41. **Observation of nuclear magnetic octupole moment of ^{133}Cs** , V. Gerginov, A. Derevianko and C. E. Tanner, *Phys. Rev. Lett.*, **91**, 072501 (2003).
42. **Anisotropic pseudo-potential for polarized dilute quantum gases**, A. Derevianko, *Phys. Rev. A* **67**, 033607 (2003); *Erratum: Phys. Rev. A* **72**, 039901(E) (2005)
43. **Accurate relativistic many-body calculations of van der Waals coefficients C_8 and C_{10} for alkali-metal dimers**, S. G. Porsev and A. Derevianko, *J. Chem. Phys.* **119**, 844 (2003)
44. **Correlated many-body treatment of the Breit interaction with application to cesium atomic properties and parity violation**, A. Derevianko, *Phys. Rev. A* **65**, 012106 (2002)
45. **Reevaluation of the role of nuclear uncertainties in experiments on atomic parity violation with isotopic chains**, A. Derevianko and S. G. Porsev, *Phys. Rev. A* **65** 052115 (2002)
46. **Fourth-order perturbative extension of the single-double excitation coupled-cluster method**, A. Derevianko and E. D. Emmons, *Phys. Rev. A* **66**, 012503 (2002)
47. **High-accuracy relativistic many-body calculations of van der Waals coefficients C_6 for alkaline-earth atoms**, S. G. Porsev and A. Derevianko, *rapid communication Phys. Rev. A* **65**, 020701(R) (2002)
48. **High-precision determination of transition amplitudes of principal transitions in Cs from van der Waals coefficient C_6** , A. Derevianko and S. G. Porsev, *Phys. Rev. A* **65**, 053403 (2002)
49. **van der Waals interactions between molecular hydrogen and alkali-metal atoms**, C. Zhu, A. Dalgarno and A. Derevianko, *Phys. Rev. A* **65**, 034708 (2002).
50. **Feasibility of cooling and trapping metastable alkaline-earth atoms**, A. Derevianko, *Phys. Rev. Lett.* **87**, 023002 (2001) (*physics/0105030*)
51. **Many-body calculations of electric-dipole amplitudes for transitions between low-lying levels of Mg, Ca, and Sr**, S. G. Porsev, M. G. Kozlov, Yu. G. Rakhlina, A. Derevianko, *Phys. Rev. A* **64**, 012508 (2001).
52. **Enhanced cooling of hydrogen by a buffer gas of alkali-metal atoms**, A. Derevianko, R. Cote, A. Dalgarno, G.-H. Jeung, *Phys. Rev. A* **64**, 011404 (2001).
53. **Interaction Potentials of LiH, NaH, KH, RbH and CsH**, N. Geum, G.-H. Jeung, A. Derevianko, R. Cote, A. Dalgarno, *J. Chem. Phys.* **115**, 5984 (2001).
54. **High-precision calculations of van der Waals coefficients for heteronuclear alkali-metal dimers**, A. Derevianko, J.F. Babb, A. Dalgarno, *Phys. Rev. A* **63**, 052704 (2001)
55. **Reconciliation of the Measurement of Parity-Nonconservation in Cs with the Standard Model**, A. Derevianko, *Phys. Rev. Lett.*, **85**, 1618 (2000)
56. **Long-range Interaction of Two Metastable Rare-gas Atoms**, A. Derevianko and A. Dalgarno, *Phys. Rev. A*, **62** , 062501 (2000)
57. **Precision Study of $5p\ 2P_{1/2} - 5d\ 2D_{3/2}$ Transition Matrix Elements in Atomic 87Rb** , S.B. Bayram, M. Havey, M. Rosu, A. Sieradzian, A. Derevianko, and W. R. Johnson, *rapid communication, Phys. Rev. A* **61**, 050502(R) (2000).
58. **Electric-octupole and Pure-electric-quadrupole Effects in Soft-x-ray Photoemission**, A. Derevianko, O. Hemmers, S. Oblad, P. Glans, H. Wang, S. B. Whitfield, R. Wehlitz, I. A. Sellin, W. R. Johnson, and D. W. Lindle, *Phys. Rev. Lett.* **84**, 2116 (2000).
59. **Many-body and Model-potential Calculations of Low-energy Photoionization Parameters for Francium**, A. Derevianko, W.R. Johnson, and H. R. Sadeghpour, *Phys. Rev. A*, **61**, 022506 (2000).
60. **Review of the Advanced Generalized Theory for Stark Broadening of Hydrogen Lines in Plasmas with Tables**, J. Touma, E.Oks, S. Alexiou, and A. Derevianko, *J. Quant. Spectr. Rad. Transfer*, **65**, 543 (2000).
61. **Large Contributions of Negative Energy States to Forbidden Magnetic-Dipole Transition Amplitudes in Alkali-Metal Atoms**, I. M. Savukov, A. Derevianko, H. G. Berry, and W.R. Johnson, *Phys. Rev. Lett* **83**, 2914 (1999).
62. **High-precision Calculations of Dispersion Coefficients, Static Dipole Polarizabilities, and Atom-wall Interaction Constants for Alkali-metal Atoms**, A. Derevianko, W.R. Johnson, M. S.

- Safronova, and J.F. Babb, *Phys. Rev. Lett.*, **82**, 3589 (1999).
63. **Non-dipole Effects in Photoelectron Angular Distributions for Rare Gas Atoms**, A. Derevianko, W.R. Johnson, K. T. Cheng, *At. Data Nuc. Data Tables*, **73**, 153-211 (1999).
 64. **Relativistic Many-body Calculations of Energy Levels, Hyperfine Constants, Electric-Dipole Matrix Elements and Static Polarizabilities for Alkali-metal Atoms**, M. S. Safronova, W. R. Johnson, and A. Derevianko, *Phys. Rev. A* **60**, 4476 (1999).
 65. **Ab initio Calculations of Off-diagonal Hyperfine Interaction in Cesium**, A. Derevianko, M.S. Safronova, and W.R. Johnson, *rapid communication, Phys. Rev. A* **60**, R1741 (1999).
 66. **Relativistic Many-body Calculations of Transition Probabilities for the $2I_1 3I_2 [LSJ] - 2I_3 3I_4 [L'S'J']$ lines in Be-like Ions**, U.I. Safronova, A. Derevianko, M.S. Safronova, and W.R. Johnson, *J. Phys. B* **32**, 3527 (1999).
 67. **Non-dipole Effects in Photoionization of the $n=2$ shell of Neon: Random-Phase Approximation**, W. R. Johnson, A. Derevianko, K. T. Cheng, Valery K. Dolmatov, and Steven T. Manson, *Phys. Rev. A*, **59**, 3609 (1999).
 68. **Higher-order Stark Effects on an Excited Helium Atom**, A. Derevianko, W.R. Johnson, V.D. Ovsianikov, V.G. Pal'chikov, D.R. Plante, and G. von Oppen, *Phys. Rev. A* **60**, 986 (1999).
 69. **Relativistic Many-body Calculations of Magnetic Dipole Transitions in Be-like Ions**, U.I. Safronova, W.R. Johnson, and A. Derevianko, *Phys. Scripta* **60**, 46 (1999).
 70. **Relativistic Many-Body Calculations of Transition Probabilities for the $2I_1 2I_2 [LSJ] - 2I_3 2I_4 [L'S'J']$ lines in Be-like Ions**, U.I. Safronova, W.R. Johnson, M.S. Safronova, and A. Derevianko, *Phys. Scripta* **59**, 286 (1999).
 71. **Fine-Structure Effects in Relativistic Calculations of Static Polarizability of Helium Atom**, A. Derevianko, W. R. Johnson, V. D. Ovsianikov, V. G. Pal'chikov, D. R. Plante, G. von Oppen, *JETP*, **88**, 272 (1999).
 72. **Many-Body Calculations of the Static Atom-Wall Interaction Potential for Alkali-Metal Atoms**, A. Derevianko, W.R. Johnson, and S. Fritzsche, *Phys. Rev. A*, **57**, 2629 (1998).
 73. **Negative-energy Contribution to Transition Amplitudes in Heliumlike Ions**, A. Derevianko, I. M. Savukov, W.R. Johnson, and D.R. Plante, *Phys. Rev. A* **58**, 4453 (1998).
 74. **Relativistic Many-Body Calculations of Energy Levels, Hyperfine Constants, and Transition Rates for Sodiumlike Ions, $Z=11-16$** , M.S. Safronova, A. Derevianko, and W.R. Johnson, *Phys. Rev. A*, **58**, 1016 (1998).
 75. **Two-Photon Decay of 2^1S_0 and 2^3S_1 States of Heliumlike Ions**, A. Derevianko and W.R. Johnson, *Phys. Rev. A* **56**, 1288 (1997).
 76. **Simple Universal Multi-Particle Model of Ion Dynamical Broadening**, A. Derevianko, E. Oks, *J. Quant. Spectr. Rad. Transfer*, **58**, No 5/6, 553 (1997).
 77. **Dual-Purpose Diagnostics of Edge Plasmas of Tokamaks Based on a Novel Spectroscopic Effect**, A. Derevianko, E. Oks, *Rev. Sci. Instrum.*, **68**, 998 (1997).
 78. **Ion Impacts on Moving Emitters: A Convergent Theory of Anisotropic Broadening in High Temperature Plasmas**, A. Derevianko and E.Oks, *J. Quant. Spectr. Rad. Transfer*, **54**, No 1/2, 137 (1995).
 79. **Generalized Theory of Stark Broadening of Hydrogenlike Spectral Lines in Dense Plasmas**, E.Oks, A. Derevianko, and Ya. Ispolatov, *J. Quant. Spectr. Rad. Transfer*, **54**, No 1/2, 307 (1995).
 80. **Generalized Theory of Ion Impact Broadening in Magnetized Plasmas and Its Applications for Tokamaks**, A. Derevianko and E.Oks, *Phys. Rev. Lett.*, **73**, No 15, 2059 (1994).

OTHER PUBLICATIONS

81. **Bose-Einstein condensates of polar molecules: anisotropic interactions = anisotropic mass**, A. Derevianko, *arXiv:0807.3129*.
82. **Simplified contact pseudopotential for anisotropic interactions of polarized particles under harmonic confinement**, A. Derevianko, *arXiv:0807.3111*.
83. **Fourth-order perturbative extension of the single-double excitation coupled-cluster method, Part II: Angular reduction**, A. Derevianko (Dec. 2002), (*physics/0212008*)
84. **Non-dipole effects in photoionization of rare-gas atoms**, A. Derevianko and W.R. Johnson, Proceedings of XXII International Conference on Photonic, Electronic and Atomic Collisions, Edited by J. Burgdorfer, J.S. Cohen, S. Datz, and C.R. Vane, Rinton Press, Princeton NJ, pp. 226-237 (2001).
85. **Role of Negative-energy States and Breit Interaction in Calculations of Atomic Parity-nonconserving Amplitudes**, A. Derevianko, (*physics/0001046*)

86. **Exact Solution for Impact Broadening of Hydrogen Lines Ly-beta and Ly-gamma**, A. Derevianko and E.Oks, Spectral Line Shapes, v.10, AIP Conf. Proc. 467, p.148 (Ed. R.M. Herman, AIP Press, Woodbury, NY, 1999)
87. **Relativistic Many-body Perturbation Theory**, W.R. Johnson, M.S. Safronova, and A. Derevianko, Atomic Processes in Plasmas, AIP Conf. Proc. 443, p.3-18 (Eds. E. Oks and M.S. Pindzola, AIP Press, 1998).
88. **A New Multi-particle Model of Ion Broadening Applicable for Both High and Low Densities**, A. Derevianko, E. Oks, Spectral Line Shapes, v.9, AIP Conf. Proc. 386, p.15-18 (Eds. M. Zoppi and L. Ulivi, AIP Press, Woodbury, NY, 1997).
89. **On Exact Solution for the Impact Broadening of Hydrogen Spectral Lines**, A. Derevianko, E. Oks, Physics of Strongly Coupled Plasmas, p.286, p.292 (Eds. W.D. Kraeft, M. Schlanges, World Scientific, New Jersey, 1996)
90. **Improved Theory of Ion Impact Broadening in Magnetized Plasmas and Its Diagnostic Applications**, E. Oks and A. Derevianko, Spectral Line Shapes, AIP Conf. Proc. 328, p.34-35 (Eds. M. Zoppi and L. Ulivi, AIP Press, Woodbury, NY, 1995) .
91. **Quasi-0D Model of Acceleration of Plasma Clot in a Coaxial Gun**, A. Derevianko and S. A. Medin, *preprint #8-355, Institute for High Temperatures, Russian Academy of Sciences (1992)*

INVITED TALKS

1. **Improved test of the Standard Model with parity violation in atomic cesium**, Jan. 21, 2009, WE-Heraeus-Seminar Atomic Theory for Fundamental Interactions and Simple Systems in Strong Fields, Bad Honnef, Germany
2. **Improved test of the Standard Model with parity violation in atomic cesium**, seminar, Jan. 15, 2009, KVI, Groningen, the Netherlands.
3. **Ultracold, precise, and electroweak**, Keck seminar, Rice University, Houston, Texas, November 24, 2008
4. **Improved test of the low-energy electroweak sector of the Standard Model with parity violation in atomic cesium**, talk at the workshop on low energy precision electroweak physics in the LHC era, Institute for Nuclear Theory, Seattle, November 10, 2008
5. **Ultracold, precise, and electroweak**, AMO seminar, University of Texas, Austin, Texas, October 24, 2008
6. **CP-violating magnetic moments of atoms and molecules**, colloquium, University of Toledo, Toledo, Ohio, August 29, 2008
7. **Convergence of all-order many-body methods: coupled-cluster study for Li**, talk at the workshop on Atomic, Chemical and Nuclear Developments in Coupled Cluster Methods, Institute for Nuclear Theory, Seattle, July 17, 2008
8. **CP-violating magnetic moments of atoms and molecules**, colloquium, University of New South Wales, Sydney, Australia, May 6, 2008
9. **Black body radiation shift in Cs and optical lattice clocks**, seminar at University of Tokyo, Tokyo, Japan, Apr 9, 2008
10. **Atomic parity violation: recent progress and challenges**, talk at Symposium On Atomic Physics: A Tribute To Walter Johnson, University of Notre Dame, Indiana, Apr 5, 2008
11. **Bose-Einstein condensates of polar molecules: anisotropic interactions = anisotropic mass**, seminar at Laboratoire de Physique Theorique et Modeles Statistiques, Orsay, France, Nov 23, 2007
12. **Tests of fundamental symmetries with atoms and molecules**, colloquium at Dipartimento di Fisica, Universita' di Firenze, Florence, Italy, Nov 12, 2007
13. **Bose-Einstein condensates of polar molecules: anisotropic interactions = anisotropic mass**, seminar at Laboratoire Aime Cotton, Orsay, France, Nov 8, 2007
14. **Atomic and molecular CP-violating magnetic moments**, seminar at Imperial College, London, England, Oct 26, 2007
15. **Black body radiation and atomic clocks**, SYRTE seminar at L'Observatoire de Paris, Paris, France, Oct. 17, 2007
16. **Atomic and molecular CP-violating magnetic moments**, seminar at Laboratoire Aime Cotton, Orsay, France, Oct 10, 2007
17. **Theoretical overview of atomic parity violation**, seminar, University of Maryland, College Park, Maryland, July 25, 2007

18. **Bose-Einstein condensates of polar molecules: anisotropic interactions = anisotropic mass**, QIBEC seminar, July 18, 2007, NIST, Gaithersburg, MD
19. **Atomic and molecular CP-violating magnetic moments**, AMO seminar, University of California, Berkeley, CA, Apr 25, 2007
20. **Atomic and molecular CP-violating magnetic moments**, colloquium, Apr 11, 2007, University of Central Florida, Orlando, FL
21. **Atomic and molecular CP-violating magnetic moments**, invited talk at the Institute for Nuclear Theory workshop on EDMs and CP-violation, U. Washington, Seattle, WA
22. **Atomic and molecular CP-violating magnetic moments**, AMO seminar, Feb 5, 2007, University of Delaware, DL
23. **Atomic and molecular CP-violating magnetic moments**, CAMO seminar, Nov. 28, 2006, U. Washington, Seattle, WA
24. **Atomic and molecular CP-violating magnetic moments**, seminar, JILA, Nov. 14, 2006 Boulder, CO
25. **Black-body radiation shift in Cs and optical lattice clocks**, Time and Frequency Division seminar, Nov. 13, 2006, NIST-Boulder, CO
26. **Multipolar theory of black-body radiation shift of atomic energy levels and its implications for optical lattice clocks**, invited talk, ITAMP workshop Ultracold Group II Atoms: Theory and Applications, Sep. 18-20, 2006, Cambridge, Mass.
27. **Atomic and molecular CP-violating magnetic moments**, seminar, ITAMP/Harvard-Smithsonian, Aug. 2006.
28. **Theoretical overview of atomic parity violation**, invited talk, PAVI workshop, Milos island, Greece, May 18, 2006.
29. **Atomic and molecular CP-violating magnetic moments**, T-4 seminar, Los Alamos National Lab, May 03, 2006.
30. **Atomic parity and CP violation and impact on the particle physics**, seminar, Ohio State University, Columbus, OH, March 30, 2005.
31. **Atomic parity and CP violation and impact on the particle physics**, colloquium, Georgia Institute of Technology, Atlanta, March 10, 2005.
32. **Scalable quantum computing with magnetically interacting atoms**, seminar, ITAMP/Harvard-Smithsonian, Jan. 14, 2005. Abstract
33. **Scalable quantum computing with magnetically interacting atoms**, seminar, Princeton University, Jan. 10, 2005.
34. **Atomic searches for new physics beyond the standard model**, seminar, Yale University, Jan. 5, 2005.
35. **Manifestations of anisotropy in physics of cold metastable alkaline-earth atoms**, seminar, Georgia Institute of Technology, Atlanta, September 23, 2004.
36. **Searches for new physics beyond the standard model with atoms and molecules**, colloquium, Georgia Institute of Technology, Atlanta, September 22, 2004.
37. **Manifestations of anisotropy in physics of cold metastable alkaline-earth atoms**, invited talk, Second Workshop on Cold Alkaline-Earth Atoms, September 11-13, 2003, Copenhagen, Denmark.
38. **Ultracold collision properties of metastable alkaline-earth atoms**, invited talk, DAMOP meeting of American Physical Society, Boulder, CO, May 22, 2003.
39. **Recent theoretical developments in atomic parity violation**, invited talk, Conference on the Intersections of Particle and Nuclear Physics, New York, NY, May 20, 2003.
40. **How to derive and compute 2,400 diagrams**, Atomic Physics Seminar, Notre Dame University, March 24, 2003.
41. **Searches for New Physics with Parity Violation in Atoms**, Physics Colloquium, University of Nevada, Las Vegas, Feb. 14, 2003.
42. **Neutron skin and other things in atomic parity violation**, Institute for Nuclear Theory, University of Washington, Seattle, Oct. 2002.
43. **Prospects for Bose condensates with metastable alkaline-earth atoms**, seminar, Atomic Physics Division, NIST, Gaithersburg, Sept. 12, 2002
44. **Exploring atoms with many-body methods**, Mathematics Colloquium, University of Nevada, Reno, Feb. 14, 2002.
45. **Parity nonconservation in Cs: Breit and neutron skin corrections**, ITAMP workshop on Tests of Fundamental Symmetries with Atoms and Molecules, Harvard-Smithsonian Nov. 30, 2001.

46. **Non-dipole effects in photoionization of rare-gas atoms**, invited talk at the XXII International Conference on Photonic, Electronic and Atomic Collisions, Santa Fe, July 24, 2001.
47. ***Ab initio* relativistic many-body calculations: parity violation and long-range atom-atom interactions**, Chemistry Department seminar, Princeton University, Dec 19, 2000
48. **Parity nonconservation in Cs**, AMO/HEP seminar, University of Connecticut, Nov. 28, 2000.
49. **Parity nonconservation in Cs**, D. Pritchard's group seminar, Mass. Inst. of Technology, Nov. 10, 2000.
50. **Long-range interaction of two alkaline-earth atoms: accurate *ab initio* relativistic calculations**, ITAMP workshop on Cold Alkaline-Earth Atoms, Harvard-Smithsonian Sept. 8, 2000.
51. **Hot, Cold, and Electroweak**, Physics Colloquium, University of Nevada, Reno, Apr. 26, 2000
52. **Atomic parity-nonconservation as a test of 'new physics': towards 0.1% precision**, Colloquium, Michigan Technological University, Feb. 17, 2000
53. **Role of negative-energy states and Breit interaction in relativistic atomic structure calculations**, AMP Seminar, Harvard-Smithsonian Center for Astrophysics, Nov. 30, 1999.
54. **Simple universal multi-particle model of ion dynamical broadening**, 7th International Workshop on the Radiative Properties of Hot Dense Matter, Santa Barbara, CA, 1996.