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Education

University of Chicago, Ph.D. in Physics, June 1995
Thesis Title: Development of Ridge Resonances in Helium
Thesis Advisor: Ugo Fano
University of Chicago, B.S. 1988 in Mathematics.

Professional Recognition

American Physical Society Outstanding Referee, 2008
(No, really! See http://publish.aps.org/OutstandingReferees)
Fellow of the American Physical Society, 2003.
National Research Council Research Associate, NIST, 1995-97.
Bloomenthal Fellow, University of Chicago, 1993-94.

Academic Positions

Research Professor, Department of Physics, University of Colorado, 2008-present.
Fellow, JILA, 2002- present.
Associate Research Professor, University of Colorado, 2004-2007.
Assistant Research Professor, University of Colorado, 2000-2004.
Associate Fellow, JILA, 2000-2002.
Assistant Professor, Attendant Rank, University of Colorado, 1999-2000.
Senior Research Associate, JILA, 1997-2000.
Lecturer, Department of Physics, University of Colorado, 1997-99.
National Research Council Research Associate, NIST, Boulder, CO 1995-97.
Research Assistant, University of Chicago, 1987-88, 1990-95.

Member, DAMOP, American Physical Society

Publications

John L. Bohn

Journal Articles

1. *Extracting Dynamics from Collision Data I: Analysis of Integral Angular Momentum*
   J. Bohn and U. Fano, Phys. Rev. A **41**, 5953 (1990).

2. *Observable Characteristics of Pure Quantum States*
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3. *Phase-Amplitude Method Applied to Doubly-Excited States of He($^1S^e$)*
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4. *Multichannel Quantum Mechanics as a Hamiltonian Phase Flow*
   J. Bohn and U. Fano, Phys. Rev. A **50**, 2893 (1994).

5. *Total Phase Description of Multiparticle Quantum Systems*
   J. L. Bohn, Phys. Rev. A **51**, 1110 (1995).

6. *Fragmentation of Atomic Systems*
   J. L. Bohn and U. Fano, Phys. Rev. A **53**, 4014 (1996).

7. *Semianalytic Treatment of Two-Color Photoassociation Spectroscopy and Control of Cold Atoms*
   J. L. Bohn and P. S. Julienne, Phys. Rev. A **54**, R4637 (1996).

8. *Theory of Transport through an Array of Devices with Transverse Exit Leads*
   J. L. Bohn, Phys. Rev. B **56**, 4132 (1997).

9. *Hartree-Fock Theory of Double Condensates*
   B. D. Esry, C. H. Greene, J. P. Burke, and J. L. Bohn, Phys. Rev. Lett. **78**, 3594 (1997).

10. *Impact of the ^{87}Rb Singlet Scattering Length on Suppressing Inelastic Collisions*
    J. P. Burke, J. L. Bohn, B. D. Esry, and C. H. Greene, Phys. Rev. A **55**, R2511 (1997).

11. *Prospects for Influencing Scattering Lengths with Far-off-Resonant Light*
    J. L. Bohn and P. S. Julienne, Phys. Rev. A **56**, 1486 (1997).

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13. *Prospects for Mixed-isotope Bose-Einstein Condensates in Rubidium*
    J. P. Burke, J L. Bohn, B. D. Esry, and C. H. Greene, Phys. Rev. Lett. **80**, 2097 (1998).

14. Effective Potentials for Bose-Einstein Condensates
J. L. Bohn, B. D. Esry, and C. H. Greene, Phys. Rev. A **58**, 584 (1998).

15. Multichannel Cold Collisions: Simple Dependences on Energy and Magnetic Field
J. P. Burke, C. H. Greene, and J. L. Bohn, Phys. Rev. Lett. **81**, 3355 (1998).

16. Geometry and Symmetries of Multiparticle Systems
U. Fano, D. Green, J. L. Bohn, and T. Heim, J. Phys. B **32**, R1 (1999).

17. Ultracold Scattering Properties of the Short-Lived Rubidium Isotopes
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18. Collisional Properties of Ultracold Potassium: Consequences for Degenerate Bose and Fermi Gases
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19. Semianalytic Theory of Laser-Assisted Resonant Cold Collisions
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20. Measurement of p-wave Threshold Law Using Evaporatively Cooled Fermionic Atoms
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D. C. E. Bortolotti, A. V. Avdeenkov, and J. L. Bohn, Phys. Rev. A **78**, 063612 (2008).

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R. M. Wilson, S. Ronen, and J. L. Bohn, Phys. Rev. A **79**, 013621 (2008).

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J. L. Bohn, M. Cavagnero, and C. Ticknor, New. J. Phys. **11**, 055039 (2009).

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E. J. Halperin, M. W. C. Sze, J. P. Corson, and J. L. Bohn, Phys. Rev. A **100**, 013608 (2019, 11 July).

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L. D. Augustovičová and J. L. Bohn, New J. Phys **21**,103022 (2019, 10 October).

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Proceedings, etc.

1. Collisional Robustness of Ultracold Molecular Gases

J. L. Bohn, A. V. Avdeenkov, and A. Volpi, in *Interactions of Cold Atoms and Molecules*, P. Soldan, M. T. Cvitas, J. M. Hutson, and C. S. Adams, eds (Daresbury: CCP6, 2003), p. 54.

2. Prospects for Bose-Einstein Condensation in Ultracold Molecules

J. L. Bohn, A. V. Avdeenkov, and A.Volpi, published in Laser Physics **13**, 1091 (2003).

3. Field-Linked States in Ultracold Molecular Collisions

J. L. Bohn and A. V. Avdeenkov, published in Physica Scripta **T110**, 292 (2004).

4. Electric Field Spectroscopy of Ultracold Polar Molecular Dimers

J. L. Bohn and C. Ticknor, in *Proceedings of the XVII International Conference on Laser Spectroscopy*, E.A. Hinds, A. Ferguson, E. Riis, eds., (World Scientific, 2005), p. 207.

5. How Does a Dipolar Bose-Einstein Condensate Collapse?

J. L. Bohn, R. M. Wilson, and S. Ronen, Proceedings of the 17th International Laser Physics Conference, published in Laser Physics **19**, 547 (2009).

6. Work Smarter, Not Harder: Scientists Use Machine Learning Algorithms to Streamline Quantum Chemistry Calculations

J. L. Bohn, Perspective Article in New J. Phys. **21**, 021001 (2019).

Book Chapter

Electric Dipoles at Ultralow Temperatures

J. L. Bohn, in *Cold Molecules: Theory, Experiment, Applications*, R. V. Krems, W. C. Stwalley, and B. Friedrich, eds (2009, CRC Press).

Book

A Student's Guide to Analytical Mechanics

J. L. Bohn (2018, Cambridge University Press).

Available wherever fine books are sold!

Invited Presentations
John L. Bohn

Phase-Amplitude Method in Helium
Workshop on New Developments in Two-Electron Atoms and Ions, JILA, Boulder, CO, July 1992.

Wave Function Evolution for Two-Electron Atoms on the Real Axis
Workshop on Complex R-Plane Techniques, Charlottesville, VA, October 1993.

Development of Ridge Resonances in Helium
Workshop on Two-Electron Processes in Photon-Helium Interactions, JILA, Boulder, CO, January 1996.

Collisional Properties of Ultracold ^{40}K: Consequences for Degenerate Fermi Gases
Workshop on Collisions of Cold, Trapped Atoms, JILA, Boulder, CO, November 1997.

How to Win Friends and Influence Cold Atoms
Kansas State University, March 1998.

How to Win Friends and Influence Cold Atoms
ITAMP Workshop on Threshold Phenomena, Cambridge, MA, June 1998.

Two, Three, Many: Hyperspherical Coordinate Representations of Several-Body Phenomena
ITAMP Workshop on Threshold Phenomena, Cambridge, MA, June 1998.

K-Harmonic Representation of Dilute Bose-Einstein Condensates
Workshop on Hyperspherical Harmonic Methods in Atomic, Molecular, and Nuclear Theory, Institute for Nuclear Theory, Seattle, WA, January 1999.

Molecular Spin Relaxation in Cold Atom-Molecule Collisions
Workshop on Trapping, Spectroscopy, and Collisions of Ultracold Molecules, ITAMP, Cambridge, MA, July 1999.

Cold Collisions of Potassium at the Turn of the Millennium
European Laboratory for Nonlinear Spectroscopy (LENS), University of Florence, Italy, September 1999.

Chemistry of Ultracold Atomic and Molecular Gases
University of Colorado Chemical Physics Colloquium, November 1999.

Cold Collisions of Atoms and Molecules
University of Oregon Department of Physics, Eugene, Oregon, February 2000.

As the Molecules Turn: Collisions in an Ultracold Molecular Gas
JILA Colloquium, Boulder, Colorado, November 2001.

As the Molecules Turn: Collisions in an Ultracold Molecular Gas
Center for Ultracold Atoms Seminar, Harvard University, Cambridge, Massachusetts, January 2002.

Prospects for BEC in Ultracold Molecules
Laser Physics 2002 Workshop, Bratislava, Slovakia, July 2002.

Linking Ultracold Polar Molecules
Resonances and Reflections: Profiles of Ugo Fano's Physics and its Influences, ITAMP, Cambridge, Mass, July 2002.

Electric Field Control of Ultracold Polar Molecules
DAMOP 2003, Boulder, CO, May 2003.

When a Body Meets a Body: Cold Collisions in an Ultracold Molecular Gas
Gordon Research Conference, Tilton, NH, June 2003.

Field-Linked States of Ultracold Polar Molecules
XXIII ICPEAC Meeting, Stockholm, Sweden, July 2003.

When Good Molecules Go Bad: Inelastic Cold Collisions in External Fields
Another ITAMP Workshop on Cold Molecules, Cambridge, MA, January 2004.

Ultracold Collisions: From Atoms to Molecules
Workshop on "Bose-Einstein Condensation: From Atoms to Molecules," University of Durham, Durham, England, March 2004.

Dipole-Bound Molecular Dimers
228th Meeting of the American Chemical Society, Philadelphia PA, August 2004.

Things That Go Bump in the Cold
University of Connecticut Atomic Physics Seminar, Storrs, CT, November 2004.

Taming the Sleeping Dragon: Control over Collisions in an Ultracold Gas
International Seminar on Atomic Processes, Zushi, Japan, January 2005.

Electromagnetic Fields in Action: Controlling Cold Collisions of Molecules
69th Annual Meeting of the Deutsche Physikalische Gesellschaft, Berlin, March 2005.

Electric Field Spectroscopy of Ultracold Molecular Dimers
17th International Conference of Laser Spectroscopy, Aviemore, Scotland, June 2005.

Electric Field Spectroscopy of Ultracold Molecular Dimers
Telluride Science Research Workshop on Ultracold Molecues, Telluride, CO, July 2005.

Manipulation of Cold Polar Molecules Using Electric Fields
EU Training School on "Achievements and Perspective of Cold Molecules," Les Houches, France, March 2006.

Stability of Dipolar Condensates Revisited
Workshop on "Correlated Many-Body Phenomena in Dipolar Systems", Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, June 2006.

Polar Molecules: New Angles in Ultracold Matter
10th U.S.-Japan Workshop, Breckenridge, CO, August 2006.

Cold Collisions: Calamity and Control
Heraeus Seminar on Cold Molecules, Bad Honnef, Germany, October 2006.

Better Chemstry Through Dipoles
Atomic Physics Seminar, University of Kentucky, Lexington, KY, February 2008.

Physics of Baseball at a Mile High
Public lecture, University of Colorado, March 15, 2008.

Better Chemistry Through Dipoles
University of Colorado Physics Colloquium, Boulder, CO, May 2008.

Coming Together, Falling Apart: Instability in a Dipolar BEC
17th International Laser Physics Workshop (LPHYS '08), Trondheim Norway, July 2008.

A Little Dipole Goes a Long Way: Electric Control of Ultracold Collisions
6th Congress of the International Society for Theoretical Chemical Physics, Vancouver, July 2008.

Coming together, Falling Apart: Instability in a Dipolar BEC
Theoretical Physics Seminar, Colorado School of Mines, Golden, CO, Sept. 2008.

Which Way is Up? Basic Physics of Dipolar Bose-Einstein Condensates
JILA Colloquium, Boulder, CO, Feb. 2009.

Which Way is Up? Or, How a BEC Lives with Dipolar Interactions
AMO Physics seminar, University of Illinois, Urbana, IL, Feb. 2009.

Which Way is Up? Or, How a BEC Lives with Dipolar Interactions
Joint Atomic Physics Colloquium, ITAMP, Cambridge, MA, Mar. 2009.

Collapse of Dipolar BEC's: What Can We Learn?
International Workshop on Ultracold Atoms and Molecules, National Tsing-Hua University Hsinchu, Taiwan, March 2009.

Better Chemistry Through Dipoles
Seminar at the Institute of Atomic and Molecular Sciences, Academica Sinica, Taipei, Taiwan April 2009.

Which Way is Up? Or, How a BEC Lives with Dipolar Interactions
Physics Colloquium, Washington State University, Pullman, WA, April 2009.

Quantum Physics of the Dipolar Interaction
Aspen Center for Physics, Aspen, CO, June 2009.

Chemistry on Demand: How Low Temperatures, Fermi Statistics, Electric Fields, and Optical Lattices Can Conspire to Influence Reaction Rates
Workshop on Coherence in Ultracold Molecular Physics, Vancouver, BC, May 2010.

Chemistry on Demand: How Low Temperatures, Fermi Statistics, Electric Fields, and Optical Lattices Can Conspire to Influence Reaction Rates
EUROQUAM Workshop on Quantum Cold Matter: Achievements and Prospects, Ischgl, Austria, Sept. 2010.

Control of Ultracold Chemistry
Meeting of the Optical Society of America (and Laserfest!), Rochester, NY, Oct. 2010.

Toward Dipolar Bose Liquids, Part I: Stability
APS March Meeting, Dallas, TX, March 2011.

An Introduction to the Physics of Dipolar Quantum Gases by Means of Pretty Pictures
Gordon Conference, Mount Snow, VT, June 2011.

Ultracold Molecules as Quantum Molecular Beams
Conference on the Dynamics of Molecular Collisions, Snowbird, UT, July 2011.

Crash, Bang, Boom! Cold Collisions in the Über-Resonant Regime
Yet Another Cold Molecule Workshop, ITAMP, Cambridge, MA, Oct. 2011.

Dipolar Superfluids: New Angles in Condensed Matter
ABC Seminar, University of Washington, Seattle, Feb. 2012.

Ultracold Molecules as Quantum Molecular Beams, or Chemistry at Absolute Zero
Chemistry Colloquium, University of Nevada Las Vegas, March 2012.

超冷 極性 分子: 旋子
International Conference on Quantum Gases of Polar Molecules and Magnetic Atoms, Tsinghua University, Beijing, August 2012.

Ultracold Collisions in the Überresonant Regime
Workshop on Cold and Ultracold Molecules, Obergurgl, Austria, November 2012.

Ultracold Collisions in the Überresonant Regime
Workshop on New Science with Ultracold Atoms, KITP, Santa Barbara, CA, March 2013.

Ultracold Molecules as Quantum Molecular Beams, or Chemistry at Absolute Zero
Chemical Physcis Colloquium, University of Colorado, March 2013.

Ultracold Collisions in the Überresonant Regime
AMO Physics seminar, UCLA, Los Angeles, April 2013.

Quantum Physics of Ultracold Atoms
Science Boot Camp for Librarians, Boulder, CO, June 2013.

Who Put the "U" in the Unitary Bose Gas?
Center for Ultracold Atoms seminar, Cambridge, MA, March 2014.

Ultracold Molecules: More Resonances than You can Shake a Stick at
Frontiers of Cold Matter, Joint Quantum Institute, College Park, MD, May 2014.

Nonequilibrium Dynamics of an Ultracold Dipolar Gas
Conference on Cold and Controlled Molecules and Ions, Locarno, Switzerland, Sept. 2014.

Will It Stick? The Influence of Many Resonance on Few Bodies
Workshop on "The Few and the Many in Ultracold Physics", Orsay, France, November 2014.

Control of Cold Molecules
Workshop on New Directions in Cold Chemical Physics, JILA, July 2015.

Molecular Velcro: Sticking in Ultracold Molecular Collisions
Dynamics of Molecular Collisions XXV, Asilomar, CA, July 2015.

Peering into the Depths: The Hidden World of Ultracold Atoms and Molecules
Center for Theory of Quantum Matter, Boulder, CO, Sept. 2015.

Dipolar Shielding of Ultracold Polar Molecules
Universität Stuttgart, July 2017.

Ground State of the Resonant Bose Gas
Center for Ultracold Atoms Seminar, Cambridge, MA June 2018.

Ground State of the Resonant Bose Gas
LPHYS'18 Meeting, Nottingham, England, July 2018.

Rocky Mountain High: The Physics of Baseball at Elevation
50th Annual DAMOP Meeting, Milwaukee, WI, May 2019.

Ultracold Collisions of Polyatomic CaOH Molecules
10th Congress of the ISTCP, Tromsø, Norway, July 2019.

Rocky Mountain High: The Physics of Baseball at Elevation
Saturday Physics Series, University of Colorado, Boulder, CO Sept. 2019.

The 2019 Dalgarno Memorial Lectures, Harvard University, Oct. 2019:
The Electric Beaker: Prospects for Controlling Chemistry in an Ultracold Gas, Oct. 7
Every Dipole Has Its Moment, Oct. 8
Agents of Shield: Protecting Molecules from Inelastic Collisions, Oct. 10

Other:

Organizer of a symposium on Ultracold Molecules, AAAS Meeting, Denver, Feb. 2003.
Organizer of the Student Symposium at the 2003 DAMOP Meeting, Boulder, CO, May 2003.
DAMOP Fellowship Committee, 2004-06.
Member of the CU Wizards group, which brings science to elementary school children.
Member of the organizing committee, Annual Meeting of the Four Corners Section of the APS, 2005.
DAMOP softball committee, 2006-2011.
APS Few-Body Group Nominating Committee, 2008.
Co-Organizer, Colorado Cold Molecule (COCOMO) Workshop, Boulder, July 15-17, 2009.
Co-organizer, Workshop on Ultracold Molecules, National Institute for Theoretical Physics, Stellenbosch, South Africa, November 2011.
Member, Editorial Board of Physical Review A, 2014-2019.
Visiting Scientist, Laboratoire Aime Cotton, Orsay, France, November 2014.
Visiting Scientist, Universität Stuttgart, July 2017.

Member, Editorial Board of the American Journal of Physics, 2019-