

# ELEANOR HODBY

hodby@colorado.edu

## EDUCATION

- University of Oxford, UK. Ph.D. Degree in Atomic and Laser Physics (2002)  
University of Oxford, UK. M.Phys. Honours Degree (Physics), Class 1 (1998)

## POST-DOCTORAL WORK

- NIST- Boulder Postdoctoral research associate in the Time and Frequency Division,  
Atomic Devices and Instrumentation Group of Dr. John Kitching (2005-2008)  
JILA, Univ. of Colorado Postdoctoral research associate in Atomic and Laser Physics in group of  
Prof. Carl Wieman (2002-2005)

## TEACHING EXPERIENCE

- Full time senior physics instructor at CU Boulder, 2021-present, instructor 2018-2021.
- Part-time instructor for Phys 1010/1020, 'Physics of Everyday Life' at CU Boulder, 2010 - 2017
- Supervision of summer undergraduate research students at NIST
- TA for Phys 1230, 'Light and Color' and Phys 2020 'General Physics 2'
- Undergraduate tutorials at Oxford Univ. (Quantum Mechanics, Electromagnetism, Atomic Physics)

## SERVICE ACTIVITIES

- Director of Diversity Initiatives, CU-Physics, (2021 – present)
- Chair of Representation, Recruitment and Retention Committee, CU-Physics (2021-22)
- Chair of Physics Undergraduate Curriculum Committee (2019-20) and Physics Undergraduate Advising Committee (present) at CU Boulder
- Mentored new Phys 1120 instructor (Summer 2020)
- Regular 'science/maths volunteer' at High Peaks Elementary, Boulder (talks, science fair, maths club)

## ACADEMIC AWARDS

- Lindemann Postdoctoral Fellowship award (2002)
- Senior Scholarship at Christ Church College (2000 – 2002)
- Scott prize for highest mark in M.Phys. Final Honours School (1998)
- Oxford Lasers prize for M.Phys. 4<sup>th</sup> year project work (1998)

## SKILLS and EXPERTISE

My background in both teaching and experimental research has provided a wide range of skills and experience:

- Communicating scientific ideas to a wide range of audiences (1<sup>st</sup> grade through research colleague) in a logical, succinct and engaging manner
- Ability to listen, ask questions and be flexible, tailoring teaching style and content to the current audience
- Ability to work independently as sole instructor for a 500+ student course, and lead a teaching team that includes TAs, LAs, lab and demo staff
- Productive communication with a wide range of people and organizations both within the department and across the university (honor code, disability services, student advisors etc)
- Reliability and the ability to meet a consistent stream of deadlines
- Planning, execution and analysis of course material as an instructor and complex experiments as a researcher
- Giving talks and presentations at major international conferences (see attached list)
- Researching, writing and editing technical papers (see publication list)

# PUBLICATIONS

1. *Compact Atomic Magnetometer and Gyroscope based on a Diverging Laser Beam.*  
J. Kitching, E.A. Donley, **E. Hodby**, A. Shkel, and E.J. Eklund  
U.S. Patent 7,872,473, 18 January 2011  
  
Note: Strict restrictions on publications at NIST due to DARPA funding.
2. *Ultracold molecule production via a resonant oscillating magnetic field*  
S.T. Thompson, **E. Hodby** and C.E. Wieman  
Phys. Rev. Lett. **95**, 190404 (2005)
3. *Production efficiency of Feshbach molecules in bosonic and fermionic systems.*  
**E. Hodby**, S.T. Thompson, C.A. Regal, M. Greiner, A.C. Wilson, D.S. Jin, E.A. Cornell and C.E. Wieman  
Phys. Rev. Lett. **94**, 120402 (2005)
4. *Spontaneous dissociation of  $^{85}\text{Rb}$  Feshbach molecules*  
S.T. Thompson, **E. Hodby** and C.E. Wieman  
Phys. Rev. Lett. **94**, 020401 (2005)
5. *Very high precision bound-state spectroscopy near a Rb-85 Feshbach resonance.*  
N. Claussen, S. Kokkelmans, S. Thompson, E. Donley, **E. Hodby** and C.E. Wieman  
Phys. Rev. A **67**, 060701 (2003).
6. *Experimental observation of a superfluid gyroscope in a dilute Bose-Einstein condensate,*  
**E. Hodby**, G. Hechenblaikner, S. A. Hopkins, O. Marago and C.J. Foot  
Phys. Rev. Lett. **91**, 090403 (2003).
7. *Vortex nucleation in Bose-Einstein condensates in an oblate, purely magnetic potential.*  
**E. Hodby**, S. A. Hopkins, G. Hechenblaikner, N. L. Smith and C. J. Foot  
Phys. Rev. Lett. **88**, 010405 (2002)
8. *Direct observation of irrotational flow and evidence of superfluidity in a rotating Bose-Einstein condensate.*  
G. Hechenblaikner, **E. Hodby**, S.A. Hopkins, O. Marago and C.J. Foot  
Phys. Rev. Lett. **88**, 070406 (2002)
9. *Temperature dependence of damping and frequency shifts of the scissors mode of a trapped Bose-Einstein condensate.*  
O. Marago, G. Hechenblaikner, **E. Hodby** and C.J. Foot  
Phys. Rev. Lett. **86**, 3938 (2001)
10. *Experimental observation of Beliaev coupling in a Bose-Einstein condensate*  
**E. Hodby**, O. Marago, G. Hechenblaikner and C.J. Foot  
Phys. Rev. Lett. **86**, 2196 (2001)

11. *Bose-Einstein condensation in a stiff TOP trap with adjustable geometry.*  
**E. Hodby**, G. Hechenblaikner, O. Marago, J. Arlt, S. Hopkins and C.J. Foot  
 J. Phys. B: At. Mol. Opt. Phys. **33**, 4087 (2000)
12. *Observation of harmonic generation and nonlinear coupling in the collective dynamics of a Bose-Einstein condensate.*  
 G. Hechenblaikner, O. Marago, **E. Hodby**, J. Arlt, S. Hopkins and C.J. Foot  
 Phys. Rev. Lett. **85**, 692 (2000)
13. *Observation of the scissors mode and evidence for superfluidity of a trapped Bose-Einstein condensed gas*  
 O. Marago, S. Hopkins, J. Arlt, **E. Hodby**, G. Hechenblaikner and C.J. Foot  
 Phys. Rev. Lett. **84**, 2056 (2000)
14. *Bose Einstein condensation in a rotating anisotropic TOP trap.*  
 J. Arlt, O. Marago, **E. Hodby**, S. Hopkins, G. Hechenblaikner, S. Webster and C.J. Foot  
 J.Phys.B **32**, 5861 (1999)

## CONFERENCE TALKS

1. *Production and decay of ultracold Feshbach molecules in bosonic and fermionic systems*  
 Gordon Research Conference, Tilton, New Hampshire  
 June 2005, invited talk.
2. *Molecule conversion efficiency in a linear sweep of the magnetic field through the Feshbach resonance.*  
 DAMOP (Division of Atomic, Molecular and Optical Physics, A.P. S.), Lincoln, Nebraska.  
 May 2005, contributed talk.
3. *Production and decay of ultracold Feshbach molecules in bosonic and fermionic systems*  
 NIST (National Institute for Science and Technology), Gaithersburg, Maryland  
 February 2005, invited talk.
4. *Atom-Molecule coherence in a dilute gas Bose-Einstein condensate*  
 DAMOP (Division of Atomic, Molecular and Optical Physics, A.P. S.), Tucson, Arizona.  
 May 2004, contributed poster.
5. *Atom-Molecule coherence in a dilute gas Bose-Einstein condensate*  
 EURESCO 'Bose Einstein Condensation' conference, San Feliu, Spain.  
 September 2003, invited talk.
6. *Atom-Molecule coherence in a dilute gas Bose-Einstein condensate*  
 QFS (Quantum Fluids and Solids) conference, Albuquerque, New Mexico.  
 August 2003, invited talk.

7. *Atom-Molecule coherence in a dilute gas Bose-Einstein condensate*  
Aspen Theory Workshop 'Exploring the interface between cold atoms and condensed matter physics', Aspen, Colorado.  
June 2003, invited talk.
8. *Atom-Molecule coherence in a dilute gas Bose-Einstein condensate*  
DAMOP (Division of Atomic, Molecular and Optical Physics, A.P. S.), Boulder, Colorado.  
May 2003, contributed talk.
9. *Superfluidity and rotating BECs*  
'Quantum Optics V' EC network conference, Zakopane, Poland.  
June 2001, invited talk.
10. *Observation of the scissors mode and evidence for superfluidity of a trapped BEC*  
6<sup>th</sup> Young Atomic Opticians conference, Brighton, UK.  
March 2000, contributed talk.
11. *Vortex production and detection in a Bose-Einstein condensate*  
5<sup>th</sup> Young Atomic Opticians conference, Potsdam.  
March 1999, contributed talk.