

Gareth John Conduit

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Full clean driving license

Employment

- Oct 2011 – **Gonville & Caius College, Cambridge, UK**
Junior Research Fellow (on intermission 2009-2011).
- Oct 2009 – Sep 2011 **Royal Commission for the Exhibition of 1851 Research Fellow,**
Dean of Faculty Fellow at Weizmann Institute of Science, Israel,
and Kreitman Fellow at Ben Gurion University, Israel.
- Aug–Oct 2006 **Institute of Astronomy, University of Cambridge, UK**
Jul–Aug 2005 A study of star cluster mergers inside a dark matter halo (under Dr M.I. Wilkinson).
- Jul–Aug 2006 **Colour Design Research Centre, Kingston University, UK**
Sep–Oct 2003 Developing the Colour Contrast Assessment Tool model and program for determining sign visibility to visually impaired persons (under Prof. H. Dalke).
- Aug–Sep 2005 **Theory of Condensed Matter, University of Cambridge, UK**
Comparing carbon nanotube band structures calculated by CASTEP with those from ONETEP (under Dr P.D. Haynes).
- Jul–Sep 2004 **Theoretical Astronomy Group, University of Leicester, UK**
N-body simulations of major halo mergers (under Prof. W. Dehnen).
- Jul–Sep 2003 **Ford Motor Company, Basildon, UK**
- Jul–Sep 1999 & 2001 **Newman & Spurr Consultancy Ltd, Camberley, UK**
- Jul 2000 **McLaren Composites, Shalford, UK**

Grants & funding

- \$60,000** Dean of Faculty Fellowship at Weizmann Institute of Science, Israel (2010-2012)
£100,000 Royal Commission for the Exhibition of 1851 Research Fellowship (2009-2012)
£90,000 Research Fellowship at Gonville and Caius College, Cambridge (2009-2015)
\$50,000 Kreitman Post-Doctoral Fellowship at Ben Gurion University, Israel (2009-2011)
£1,000 Nuffield Foundation Research Bursary (2005)

Education

- 2006–09 PhD, Theory of Condensed Matter Group, University of Cambridge, UK**
Under the supervision of Prof. B.D. Simons & Dr P.D. Haynes
Awards Abdus Salam prize for best PhD project (2008), Corfield Research Scholar (2006–2009)
- 2002–06 MA & MSci, Selwyn College, University of Cambridge, UK**
2006 Part III Experimental & Theoretical Physics (first class, 2nd of 110 candidates)
2005 Part II Experimental & Theoretical Physics (first class, 2nd of 127 candidates)
2004 Part IB Advanced Physics, Physics & Mathematics (first class, 1st of 598 candidates)
2003 Part IA Chemistry, Materials, Mathematics & Physics (first class, 1st of 592 candidates)
Awards Siddans prize (2006), Braybrook prize (2005), BP Advanced Physics prize (2004), University Part IB Mathematics prize (2004), Agilent Technologies Prize (2003)
- 1995–02 Royal Grammar School, Guildford, UK**
2002 4A's in 'A' level Mathematics, Further Mathematics, Physics & Chemistry
2001 Distinction in Advanced Extension Award Mathematics
Awards Bronze medal at the 2002 International Physics Olympiad in Bali
Gold medal in the 2002 British Physics Olympiad & NPL Experimental Physics Prize
Gold medal & national finalist in 2002 British Informatics Olympiad
Nationally in the top five of 'A' level Physics candidates

Professional awards & synergetic activities

- Spin-off company *cromocon*TM winner of Business with Outstanding Social Impact at the Social Entrepreneurship Champions of Change Recognition Awards sponsored by the Higher Education Funding Council for England & charity UnLtd (2011)
- Organized a Physics Graduate Students' Conference with over 200 attendees (2008)
- Member of the Graduate Students' Committee, representing the views of students to the faculty (2007–2009)
- Referee for PRL, PRA, PRB, EPL, Physica C, Phys. Chem. Chem. Phys. & Cent. Eur. J. Phys.

Teaching experience

- Supervised summer student project published in C.W. von Keyserlingk & G.J. Conduit PRA **87**, 73465 (2011)
- Assisted in the supervision of two summer students (2007 & 2009)
- Teaching assistant for undergraduate & Master's students at the University of Cambridge (2006–2009)
- Lectures to the British Physics Olympiad Team (2007–2009)
- Example classes for secondary school pupils in the Senior Physics Challenge (2007 & 2008)

Publications

1. **Comment on “Field-Tuned Quantum Phase Transition in the Insulating Regime of Ultrathin Amorphous Bi Films”**
G.J. Conduit & Y. Meir
Submitted to Phys. Rev. Lett. & arXiv:1112.1657 (2011).
2. **Microscopic theory of the magnetoresistance of disordered superconducting films**
G.J. Conduit & Y. Meir
Submitted to Phys. Rev. Lett. & arXiv:1111.2941 (2011).
3. **First-principles calculation of electronic transport in low-dimensional disordered superconductors**
G.J. Conduit & Y. Meir
Phys. Rev. B **84**, 064513 (2011).
4. **Resistance jumps and the nature of the finite-flux normal phase in ultra-thin superconducting cylinders**
G.J. Conduit & Y. Meir
Submitted to Phys. Rev. Lett. & arXiv:1107.1246 (2011).
5. **Combinatorial development of a polycrystalline alloy using importance sampling**
B.D. Conduit, G.J. Conduit, M.C. Hardy & H.J. Stone
Rolls-Royce Strategic Partnership (2011).
6. **Strategies for improving the efficiency of quantum Monte Carlo calculations**
R.M. Lee, G.J. Conduit, N. Nemeč, P. López Ríos & N.D. Drummond
Phys. Rev. E **83**, 066706 (2011).
7. **Itinerant ferromagnetism in an interacting Fermi gas with mass imbalance**
C.W. von Keyserlingk & G.J. Conduit
Phys. Rev. A **83**, 053625 (2011).
8. **Effect of three-body loss on itinerant ferromagnetism in an atomic Fermi gas**
G.J. Conduit & E. Altman
Phys. Rev. A **83**, 043618 (2011).
9. **Itinerant ferromagnetism in a two-dimensional atomic gas**
G.J. Conduit
Phys. Rev. A **82**, 043604 (2010).
10. **Dynamical instability of a spin spiral in an interacting Fermi gas as a probe of the Stoner transition**
G.J. Conduit & E. Altman
Phys. Rev. A **82**, 043603 (2010).
11. **Theory of quantum paraelectrics and the metaelectric transition**
G.J. Conduit & B.D. Simons
Editors’ Suggestion in Phys. Rev. B **81**, 024102 (2010).
12. **A repulsive atomic gas in a harmonic trap on the border of itinerant ferromagnetism**
G.J. Conduit & B.D. Simons
Phys. Rev. Lett. **103**, 200403 (2009).

13. **Inhomogeneous phase formation on the border of itinerant ferromagnetism**
G.J. Conduit, A.G. Green & B.D. Simons
Editors' Suggestion in *Phys. Rev. Lett.* **103**, 207201 (2009).
Spotlit with accompanying Viewpoint commentary in *Physics* **2**, 93 (2009).
14. **Itinerant ferromagnetism in an atomic Fermi gas: Influence of population imbalance**
G.J. Conduit & B.D. Simons
Phys. Rev. A **79**, 053606 (2009).
15. **Diffusion Monte Carlo study of a valley degenerate electron gas and application to quantum dots**
G.J. Conduit & P.D. Haynes
Phys. Rev. B **78**, 195310 (2008).
16. **Many-flavor electron gas approach to electron-hole drops**
G.J. Conduit
Phys. Rev. B **78**, 035111 (2008).
17. **Superfluidity at the BEC-BCS crossover in two-dimensional Fermi gases with population and mass imbalance**
G.J. Conduit, P.H. Conlon & B.D. Simons
Phys. Rev. A **77**, 053617 (2008).
18. **Visibility prediction software: five factors of contrast perception for the vision impaired in the real world**
H. Dalke, A. Corso, G.J. Conduit & A. Riaz
Accepted for the 6th Cambridge Workshop on Universal Access and Assistive Technology (2012).
19. **Visual Impairment: Design, Research and Application**
H. Dalke, A. Corso & G.J. Conduit
Fifth International Conference on Design Principles and Practices in Rome (2011).
20. **Designing Inclusive Futures: Colour contrast assessment system**
H. Dalke, G.J. Conduit, B.D. Conduit, R. Cooper, A. Corso & D. Wyatt
Universal Access in the Information Society, Springer Verlag (2010).
21. **Colour contrast assessment system: design for people with visual impairment**
H. Dalke, G.J. Conduit, B.D. Conduit, R. Cooper, A. Corso & D. Wyatt
Designing Inclusive Interactions, Springer Verlag, pp. 101-112 (2010). ISBN: 978-1-84996-165-3.
5th Cambridge Workshop on Universal Access and Assistive Technology (2010).
22. **Measurement for a more visible world: colour contrast and visual impairment**
H. Dalke, G.J. Conduit, B.D. Conduit & A. Corso
Measurement, sensation and cognition, pp. 134-138 (2009). ISBN: 978-0-946754-56-4.
Measuring the Impossible Workshop, National Physical Laboratory (2009).
23. **chromocon™ system for determining sign visibility**
H. Dalke, G.J. Conduit, R. Cooper & S. Cole
Online website & manual (2009).
24. **A Device for contrast assessment**
Patent GB0712610.5 (2007).

25. Future Integrated Transport Environments: Colour Design, Lighting and Visual Impairment
Department for Transport (DfT) (2005).

Invited seminars & conference talks

- 2011** Dec Contributed talk at CMMP11, UK
Oct Invited speaker at Cambridge University Physics Society, UK
May Invited speaker at Quantum Magnetism Conference, Israel
Mar Seminar at Durham University, UK
Mar Colloquium at St Paul's School, London, UK
Mar Seminar at London Centre for Nanotechnology, University College London, UK
Mar Seminar at Rudolf Peierls Centre for Theoretical Physics, University of Oxford, UK
Mar Seminar at Theory of Condensed Matter Group, University of Cambridge, UK
- 2010** Dec Blackboard talk at Weizmann Institute of Science, Israel
Dec Invited speaker at Israeli Physical Society Conference
Dec Blackboard talk at Ben Gurion University, Israel
Oct Invited speaker at Mizpe Ramon Scientific Retreat, Israel
May Seminar at Center for Ultracold Atoms, MIT, USA
May Invited speaker at CIFAR Quantum Materials Program Meeting, Canada
Apr Seminar at Ben Gurion University, Israel
Mar Contributed talk at APS March meeting, USA
Mar Seminar at St Andrews Condensed Matter Physics Group, UK
Jan Invited speaker at Newspin 2010 Conference, Utrecht University, The Netherlands
Jan Seminar at Weizmann Institute of Science, Israel
- 2009** Dec Invited talk at Israeli Physical Society Conference
Jun Seminar at Weizmann Institute of Science, Israel
May Seminar at University of Birmingham, UK
Mar Contributed talk at APS March meeting, USA
Feb Seminar at University of Cambridge, UK
Jan Abdus Salam Prize talk at University of Cambridge, UK
- 2008** Oct Seminar at University of St Andrews, UK
Jun Seminar at University of Cambridge, UK
Feb Seminar at University of Cambridge, UK
Jan Seminar at University of Cambridge, UK
- 2007** May Seminar at University of Cambridge, UK
- 2005** Feb Colloquium at BP Institute, UK
- 2004** Sep Seminar at University of Leicester, UK

References

1. Prof. Ben D. Simons
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