

Yen Lee Loh

Curriculum Vitae

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Gender Male
Nationality Malaysian
Date of birth 1981 Jan 11

Education

University of Cambridge, United Kingdom

PhD, Theoretical Condensed Matter Physics (supervisor: Prof. Peter B. Littlewood) 2005
MSci (Hons), Physics 2000

Research Experience

Department of Physics, Purdue University, West Lafayette, IN, USA

Postdoctoral Researcher under Erica W. Carlson 2005–present

Theory of Condensed Matter Group, Cavendish Laboratory, Cambridge, UK

Graduate Student under Peter B. Littlewood 2000–2005

Amorphous Solids Group, Chemistry Department, Cambridge, UK

Summer Research Student under Stephen R. Elliott and Sergei N. Taraskin Jun–Sep 1999

Disordered Materials Group, Rutherford Appleton Laboratory, Oxfordshire, UK

Summer Research Student under Alan K. Soper and Chris J. Benmore Jun–Sep 1998

Highlights:

- Performed both analytical and numerical calculations
- Collaborated productively with postdoctoral researchers in group as well as with PhD supervisor
- Delegated a suitable research problem to a former supervisee (now a graduate student at UIUC), resulting in a publication
- Wrote Java applets to visualize Monte Carlo simulations, leading to useful insights

Teaching Experience

Cambridge University, UK

Supervisor, Part IA Physics (Trinity College) 2000

Supervisor, Part II Quantum Mechanics (Cavendish Laboratory) 2000

Supervisor, Part IB Mathematics (St Edmund's College) 2000–2001

Research Interests

- Condensed matter theory of strongly correlated electronic systems
- Theory and phenomenology of high temperature superconductivity
- Stripe phases in doped antiferromagnets
- Electrical properties of granular metals and superconductors
- Kondo systems
- Classical and quantum critical phenomena
- Frustrated magnetism
- Disordered models and materials
- Monte Carlo, molecular dynamics, and other simulation techniques

Awards

Fellow of the Cambridge Commonwealth Society	2001
J J Thomson Studentship Award (Cavendish Laboratory): 1 of 2 students	2000
Mathison Prize for examination performance (Trinity College)	2000
Tessella Prize for Software	2000
Honorary Cambridge Commonwealth Trust scholarship	2000
Overseas Research Student Award	2000
Internal Graduate Studentship (T.C.)	2000
Summer Research Studentship (T.C.)	1999
Shared Hartree and Clerk Maxwell Prize for best examination performance	1999
Senior Scholarship (T.C.) in 1 st year: 1 out of 6 students	1997
British High Commissioner's Chevening Awards	1996
Elected to Dean's List for excellent results (National University of Singapore)	1995
Examination Board Prize for 'A' Level Science	1995
Numerous awards in maths, science and essay competitions	1990–1994

Research Presentations

1. Y. L. Loh, D. X. Yao, and E. W. Carlson, "*Frustrated Magnetism on the Triangular Kagome Lattice*", colloquium at the University of Cincinnati (October 2007)
2. Y. L. Loh, D. X. Yao, and E. W. Carlson, "*Frustrated Magnetism on the Triangular Kagome Lattice*", colloquium at Ohio University (October 2007)
3. Y. L. Loh, D. X. Yao, and E. W. Carlson, "*Frustrated Magnetism on the Triangular Kagome Lattice*", colloquium at Indiana University (October 2007)
4. Y. L. Loh, E. W. Carlson, and M. Y. J. Tan, "*Efficient Algorithm for 2D Ising Models*", contributed talk at the March Meeting of the American Physical Society, Denver (2007)
5. Y. L. Loh and E. W. Carlson, "*Enhancing Superconductivity Through Inhomogeneity*", poster presented at APS March Meeting, Denver (2007)
6. Y. L. Loh, V. Tripathi, and M. Turlakov, "*The Physics of Granular Metals*", seminar at the University of Illinois at Urbana-Champaign (February 2007)
7. Y. L. Loh and V. Tripathi, "*Optical conductivity of granular metals*", contributed talk at APS March Meeting, Baltimore (2006)
8. Y. L. Loh and V. Tripathi, "*Conductivity of granular metals*", contributed talk at APS March Meeting, Los Angeles (2005)
9. Y. L. Loh and V. Tripathi, "*Magnetic droplets in nearly ferromagnetic metals*", contributed talk at APS March Meeting, Los Angeles (2005)
10. Y. L. Loh, S. N. Taraskin, and S. R. Elliott, "*Fast Time-Evolution Method for Dynamical Systems*", poster presented at Condensed Matter and Materials Physics conference, Leicester, UK (1999)

Publications

1. Y. L. Loh, D. X. Yao, and E. W. Carlson, "*Thermodynamics of Ising Spins on the Triangular Kagome Lattice*", [arXiv:0711.3471 \(2007\)](https://arxiv.org/abs/0711.3471)
2. Y. L. Loh, E. W. Carlson, and M. Y. J. Tan, "*Bond-Propagation Algorithm for Thermodynamic Functions in General 2D Ising Models*", [Phys. Rev. B 76, 014403 \(2007\)](https://doi.org/10.1103/PhysRevB.76.014403)
3. Y. L. Loh and E. W. Carlson, "*Using inhomogeneity to raise the superconducting critical temperature in a two-dimensional XY model*", [Phys. Rev. B 75, 132506 \(2007\)](https://doi.org/10.1103/PhysRevB.75.132506)
4. Y. L. Loh and E. W. Carlson, "*Efficient Algorithm for Random-Bond Ising Models in 2D*", [Phys. Rev. Lett. 97, 227205 \(Nov 2006\)](https://doi.org/10.1103/PhysRevLett.97.227205)
5. V. Tripathi and Y. L. Loh, "*Frequency and temperature dependence of the optical conductivity of granular metals: A path-integral approach*", [Phys. Rev. B 73, 195113 \(2006\)](https://doi.org/10.1103/PhysRevB.73.195113)
6. V. Tripathi and Y. L. Loh, "*Thermal conductivity of a granular metal*", [Phys. Rev. Lett. 96, 046805 \(2006\)](https://doi.org/10.1103/PhysRevLett.96.046805)

7. Y. L. Loh, V. Tripathi, and M. Turlakov, "Effective charging energy for a regular granular metal array", [Phys. Rev. B 72, 233404 \(2005\)](#)
8. Y. L. Loh and P. B. Littlewood, "Effect of Spin Fluctuations on Phonon-Mediated Superconductivity in the Vicinity of a Quantum Critical Point", [cond-mat/0611718](#); submitted to Phys. Rev. B (Nov 2006)
9. Y. L. Loh, V. Tripathi, and M. Turlakov, "Magnetic droplets in a metal close to a ferromagnetic quantum critical point", [Phys. Rev. B 71, 024429 \(2005\)](#)
10. V. Tripathi, M. Turlakov, and Y. L. Loh, "Coulomb blockade and quantum tunnelling in an array of metallic grains", [Journal of Physics: Condensed Matter 16, 4867-4880 \(2004\)](#)
11. S. N. Taraskin, Y. L. Loh, G. Natarajan, and S. R. Elliott, "Origin of the Boson Peak in Systems with Lattice Disorder", [Phys. Rev. Lett. 86, 1255-1258 \(2001\)](#)
12. Y. L. Loh, S. N. Taraskin, and S. R. Elliott, "Fast Chebyshev-polynomial method for simulating the time evolution of linear dynamical systems", [Phys. Rev. E 63, 056706 \(2001\)](#)
13. Y. L. Loh, S. N. Taraskin, and S. R. Elliott, "Fast Time-Evolution Method for Dynamical Systems", [Phys. Rev. Lett. 84, 2290-2293 \(2000\)](#)
14. C. J. Benmore and Y. L. Loh, "The structure of liquid ethanol : A neutron diffraction and molecular dynamics study", [J. Chem. Phys. 112, 13, 5877-5883 \(2000\)](#)

Additional Skills and Activities

- **Computing:** Proficient in Mathematica (including 2D/3D visualization and animation), C/C++, Java, Fortran 90 & 77, LaTeX, UNIX, Microsoft Office, OpenOffice. Familiar with AutoCAD (including 3D modeling).
- **Languages:** English (fluent), Mandarin and Malay (fair), German and French (elementary).
- **Music:** Composing, arranging, planning programs, and performing recitals and background music in public, on the piano (ABRSM Grade 7 Distinction), violin, and classical guitar
- **Volunteering:** Leading the Betty Stubbens Musicians in Lafayette, a group of 3–8 volunteers, as founder, co-ordinator, master of ceremonies, and accompanist since September 2006. Played weekly at nursing, assisted-living and retirement homes as main accompanist for Betty Stubbens Musical Entertainment Group in Cambridge from 1997–2005.
- **Other:** Member of Malaysian Mensa Society since age 5

References

Name	Prof. Erica W. Carlson	Prof. Peter B. Littlewood	Dr. Vikram Tripathi
Address	Department of Physics 525 Northwestern Avenue West Lafayette IN 47907-2036, USA	Cavendish Laboratory Madingley Road Cambridge CB3 0HE United Kingdom	Department of Theoretical Physics Tata Institute of Fundamental Research Homi Bhabha Road Mumbai 400005, India
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