

Nabil Iqbal

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Current position

Assistant professor, Department of Mathematical Sciences, Durham University

Areas of specialization

I maintain a broad research program in theoretical physics. My main interests are applications of quantum field theory, holographic duality, and string theory.

Education and Employment

2017- ...	Assistant professor, Durham University
2014-2016	Postdoctoral scholar, University of Amsterdam
2011-2014	Postdoctoral scholar, Kavli Institute for Theoretical Physics
2006-2011	PhD in Physics, Massachusetts Institute of Technology
2002-2006	B.A. in Physics and Mathematics, Cornell University

Honors & awards

2015-2016	Delta-ITP Postdoctoral Fellowship, University of Amsterdam
2010	Andrew M. Lockett III Memorial Fund Award, Massachusetts Institute of Technology
2010	Henry Kendall Teaching Award, Massachusetts Institute of Technology
2006-2009	National Science Foundation Graduate Fellowship
2006	Donald R. Yennie Prize in Physics, Cornell University
2002-2006	Pauline and Irving Tanner Dean's Scholar, Cornell University

Teaching

At Durham University:

2017-2018	Lecturer for Quantum Field Theory 2, MSc (path integral methods in quantum field theory)
2017-2018	Lecturer for General Relativity IV
2017-2018	Tutor for Single Mathematics B (first-year calculus for non-mathematics majors), Analysis in Multiple Variables II (second-year multivariable calculus), Dynamics I (first-year classical mechanics), Statistical Concepts II (second-year statistical analysis)

9/2015 Lectures on “*Entanglement in Field Theory and Gravity*” at Modave Summer School, Belgium.

Teaching Assistant for the following courses at MIT:

Spring 2011 8.962 – General Relativity

Fall 2009 8.02 – Electricity and Magnetism

Other mentorship experience:

2013-2014 Tutor for School on Wheels program for disadvantaged youth in Santa Barbara, California.

Summer 2010 Mentor for the Research Science Initiative 2010 program at MIT supervising high-school student research.

Professional activities

2016 - 2018 Served on Ph.D defense committee of four doctoral students (at Durham U. (1), U. of Amsterdam (1), and U. Libre Bruxelles (2))

2016, 2017 Co-organizer of Palestinian Advanced Physics Schools held in Birzeit and Jenin, Palestine.

2016 Co-organizer of D-ITP Entanglement Workshop at University of Amsterdam.

2014 - 2015 Co-organized seminars at University of Amsterdam.

2012 - 2013 Co-organized seminars at Kavli Institute for Theoretical Physics.

2010 - ... Referee for the journals *Phys. Rev. Lett.*, *Phys. Rev. D*, *JHEP*, *Phys. Lett. B*.

Invited talks

Approximately 60 invited talks at workshops, conferences, and research seminars:

APPLICATIONS OF HIGHER FORM SYMMETRIES

10/2018 Seminar, Swansea University

10/2018 GQFI Workshop on AQFT, Modular Techniques, and Renyi Entropy, MPI Potsdam

9/2018 Nordita Workshop: Bounding Transport and Chaos in Condensed Matter and Holography

BULK ENTANGLEMENT ENTROPY IN PERTURBATIVE EXCITED STATES

8/2018 CERN Workshop: Black holes, quantum information, and space-time reconstruction

GENERALIZED GLOBAL SYMMETRIES, GOLDSTONE MODES, AND PHOTONIZATION

5/2018 North British Mathematical Physics Seminar, University of York

GENERALIZED GLOBAL SYMMETRIES, GOLDSTONE MODES, AND HYDRODYNAMICS

12/2017 Seminar, Maynooth University

11/2017 Center for Particle Theory Colloquium, Durham University

11/2017 Theoretical Physics Colloquium (*Colloque Theorique*), University of Geneva

GENERALIZED GLOBAL SYMMETRIES AND HOLOGRAPHY

- 10/2017 Seminar, Imperial College London
- 9/2017 Delta-ITP Holography Triangle Meeting, Leiden University
- 9/2017 Seminar, Nordita, Stockholm
- 9/2017 Seminar, Universite Libre de Bruxelles

GENERALIZED GLOBAL SYMMETRIES AND DISSIPATIVE MAGNETOHYDRODYNAMICS

- 6/2017 Aspen Center for Theoretical Physics Program: Information in Quantum Field Theory
- 5/2017 HEP/GR Colloquium, Cambridge University
- 4/2017 Workshop: Holography, gauge theory, and black holes, Southampton University
- 12/2016 Cosmology Seminar, University of Amsterdam
- 11/2016 Seminar, Leiden University
- 7/2016 Nordita Workshop: Black Holes and Emergent Spacetime, Stockholm

HIGHER SPIN WILSON LINES AND THE ETERNAL BLACK HOLE

- 5/2016 Seminar, Niels Bohr Institute, Copenhagen

ANOMALIES OF THE ENTANGLEMENT ENTROPY IN CHIRAL THEORIES

- 2/2016 Seminar, Durham University
- 12/2015 Holograv Workshop: Applied Holography in Condensed Matter Systems, Porto
- 11/2015 Seminar, Oxford University
- 7/2015 Seminar, Tsinghua University, Beijing

ELECTRIC FIELDS AND QUANTUM WORMHOLES

- 7/2015 KITPC Workshop: Holographic Duality for Condensed Matter Physics, Beijing
- 5/2015 Seminar, Southampton University
- 5/2015 Seminar, Perimeter Institute
- 4/2015 Gauge/Gravity Duality 2015 Workshop, Florence
- 3/2015 Paris Joint Theory Seminar, Rencontres Theoriciennes
- 2/2015 Seminar, Leiden University

MONOPOLE CORRELATIONS IN HOLOGRAPHICALLY FLAVORED LIQUIDS

- 3/2015 Seminar, Crete Center for Theoretical Physics
- 2/2015 Seminar, Cambridge University
- 11/2014 Seminar, ICTP, Trieste
- 11/2014 Seminar, CERN
- 9/2014 Delta-ITP Holography Triangle Meeting, Leiden University
- 7/2014 APCTP Focus Program on Aspects of Holography, Pohang, South Korea
- 7/2014 Amsterdam String Workshop

HOLOGRAPHIC ENTANGLEMENT ENTROPY AND GRAVITATIONAL ANOMALIES

- 10/2014 Seminar, Utrecht University
- 5/2014 Seminar, Kavli Institute for Theoretical Physics

5/2014 Seminar, Massachusetts Institute of Technology
4/2014 Solvay Workshop on Holography for Black Holes and Cosmology, Brussels
4/2014 Seminar, University of Michigan
3/2014 Seminar, Boston University
2/2014 Seminar, UCLA

WILSON LINES AND ENTANGLEMENT ENTROPY IN HIGHER SPIN GRAVITY

10/2013 Seminar, SLAC
9/2013 Workshop: Mathematics and Physics of the Holographic Principle, Cambridge University
8/2013 APS Division of Particles and Fields Meeting, University of California, Santa Cruz
4/2013 Seminar, University of Victoria
3/2013 Seminar, Texas A&M University

RECENT DEVELOPMENTS IN CHARGED HOLOGRAPHIC FLUIDS

12/2012 ICAP 2013, Shahjalal University of Science and Technology, Sylhet, Bangladesh

FRIEDEL OSCILLATIONS AND HORIZON CHARGE IN 1D HOLOGRAPHIC LIQUIDS

2/2013 Holography and Applied String Theory Workshop, Banff
12/2012 Seminar, University of Washington
11/2012 Seminar, University of Amsterdam
10/2012 Seminar, University of Minnesota
7/2012 Strings 2012, Munich
5/2012 Seminar, Massachusetts Institute of Technology

LUTTINGER'S THEOREM, SUPERFLUID VORTICES, AND HOLOGRAPHY

3/2012 Seminar, University of Texas, Austin
1/2012 Seminar, Kavli Institute for Theoretical Physics
10/2011 Southern California String Seminar, UCLA

QUANTUM PHASE TRANSITIONS AND HOLOGRAPHIC MODELS OF SYMMETRY BREAKING

12/2010 Seminar, Perimeter Institute
6/2010 Condensed Matter, Holographic QCD, and Fluid Mechanics Workshop, McGill University
5/2010 Condensed Matter/Keck Seminar, Rice University
3/2010 Applications of AdS/CFT to Condensed Matter and Nuclear Physics Workshop, Texas A&M University

CHARGE TRANSPORT BY HOLOGRAPHIC NON-FERMI LIQUIDS

1/2010 Seminar, Harvard University

STRING THEORY: FROM BLACK HOLES TO SUPERCONDUCTORS

1/2010 General Physics Seminar, Shahjalal University of Science and Technology, Sylhet, Bangladesh