

Curriculum Vitae

Jacopo Bertolotti

Name Jacopo Bertolotti

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Professional experience

November 2016 - present: Senior Lecturer at the University of Exeter (United Kingdom).

September 2013 - November 2016: Lecturer at the University of Exeter (United Kingdom).

March 2013 - August 2013: Postdoctoral fellow at the Institut Langevin, ESPCI ParisTech (France).

January 2012 - December 2012: Research fellow at the University of Twente (The Netherlands).

December 2010 - December 2012: Research fellow at the University of Florence (Italy).

January 2011 - December 2011: Guest Scientist at the University of Twente (The Netherlands).

April 2010 - December 2010: Research fellow at the University of Twente (The Netherlands) on the project *Breakdown of universal transport: is there symmetry between absorption and gain?*

January 2008 - April 2010: Postdoctoral fellow at the European Laboratory for Non-Linear Spectroscopy (LENS) in Florence (Italy) on the project *Transport of light in disordered systems*.

January 2005 - December 2007: PhD fellowship at the University of Florence (Italy).

May 2004 - December 2004 Fellowship at the University of Florence (Italy) on the project *Random lasing*.

Education

20 February 2008: PhD in Physics at the University of Florence (Italy) with a thesis entitled “*Light transport beyond diffusion*”.

27 April 2004: Italian Degree (“Laurea”) in Physics at the University of Florence with a thesis entitled “*Study on light localization in 1D disordered systems*”.

Prizes and Honors

Philip Leverhulme Prize 2015 for Physics (100 k£).

Moseley Medal 2016 IOP (1 k£).

Funded projects

EPSRC Prosperity Partnership *Tailored Electromagnetic and Acoustic Materials* (2.4 M£, co-investigator, 2017)

Leverhulme research grant: *Prime factorization using light* (118,672 £, principal investigator, 2016).

EPSRC reactive: *Workshop: From complex nanophotonics to complex nanodevices* (12,379 £, principal investigator, 2015).

Infrastructure Research grant: *Imaging in turbid media using a digital micromirror device* (12,528 £, principal investigator, 2013). Granted by The Royal Society.

FIRB “Futuro in Ricerca”: *Anomalous transport of light in complex systems* (600 k€, principal investigator, 2009). Granted by the Italian Ministry of Education, University and Research (MIUR).

Invited talks

- IDMRCS 8, Wisła (Poland), 23-28 July 2017.
- DINAMO 2017, Siglufjörður (Iceland), 14-19 May 2017.
- EOSAM 2016, Berlin (Germany), 26-30 September 2016.
- JSAP Spring Meeting 2016, Tokyo (Japan), 19-22 March 2016.
- SPIE Photonics Europe, Brussels (Belgium), 3-7 April 2016.
- ISFAP 2015, Bandung (Indonesia), 8-10 October 2015. **(Keynote talk)**
- PPNEC 2015, Bad Honnef, Germany, 19-23 April 2015.
- BiOS/Photonics West, San Francisco, California (USA), 7-12 February 2015.
- Progress In Electromagnetics Research Symposium (PIERS), Guangzhou (China), 25-28 August 2014.
- International Workshop on Holography and related technologies (IWH2013), Kitami, Hokkaido (Japan), 15-17 October 2013.

- Computational Optical Sensing and Imaging (COSI), Arlington, Virginia (USA), 12-16 May 2013.
- European Conference on Lasers and Electro-Optics (CLEO/Europe), Munich, Germany, 23-27 June 2013.
- MESA+ Colloquium, Enschede, The Netherlands, 2012.
- Workshop “Light transport and nano-optics in random media,” King’s College, London, 2012.

Talks and posters at International conferences

- GDR Workshop “MésoImage: Recent developments in wave propagation and imaging in complex media,” Paris, France, 2012 (oral contribution).
- Unconventional Imaging and Wavefront Sensing VIII, SPIE Optics+Photonics, San Diego, 2012 (oral contribution).
- Reflection, Scattering, and Diffraction from Surfaces II , SPIE Optics+Photonics, San Diego, 2012 (oral contribution).
- Nanoengineering: Fabrication, Properties, Optics, and Devices IX , SPIE Optics+Photonics, San Diego, 2012 (oral contribution).
- Physics@FOM, Veldhoven, The Netherlands, 2012 (oral contribution).
- CLEO Europe, Munich, Germany, 2011 (poster contribution).
- Physics@FOM, Veldhoven, The Netherlands, 2011 (poster contribution).
- GDR Workshop “MésoImage: Mesoscopic Physics of Waves for Imaging in Complex Media,” Paris, France, 2009 (oral contribution).
- XIV Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, Parma, Italy, 2009 (oral contribution).
- Marian Smoluchowski Symposium on Statistical Physics, Zakopane, Poland, 2008 (poster contribution).
- OSA topical meeting “Meta,” Jackson Hole, Wyoming, 2007 (poster contribution).
- PhOREMOST general assembly meeting, Rome, Italy, 2007 (oral contribution).
- PhOREMOST scientific workshop, Florence, Italy 2006 (oral contribution).
- OSA topical meeting *Meta*, Grand Island, The Bahamas, 2006 (oral contribution).
- MMD Meeting, Genova, 2005 (oral contribution).

Conferences organized

- “Complex Nanophotonics Science Camp,” 25-28 July 2017, Cumberland Lodge (UK)
- “Complex Nanophotonics Science Camp,” 18-21 August 2015, Cumberland Lodge (UK)
- “Complex Nanophotonics Science Camp,” 27-30 August 2013, Cumberland Lodge (UK)
- “ATLCS Kick-off meeting,” 11 Mar 2011, Florence (Italy).

Short visits

April 2009: Hugo Steinhaus Center (Wrocław, Poland). Prof. Aleksander Weron.

January 2007: CSIC (Madrid, Spain). Prof. Cefe López.

Reviewing works

- (2016) Reviewer for the EPSRC Program grant, UK
- (2016) Reviewer for the NCN (Narodowe Centrum Nauki), Poland.
- (2015) Reviewer for the Horizon2020 ERC Consolidator grant.
- (2015) Reviewer for the Horizon2020 ERC Starting grant.
- (2012) Reviewer for the FCT (Fundação para a Ciência e a Tecnologia), Portugal.
- Referee for Nature, Nature Photonics, Nature Physics, Nature Communications, Phys. Rev. X, Scientific Reports, Optics Express, Optics Letters, Advanced Materials, J. Opt. Soc. Am. A, J. Opt. Soc. Am. B., and Europhys. Letters

Publons public profile: <https://publons.com/a/1168963/>

Current teaching

- Mathematics with Physical Applications (PHY2025).
- Practical Physics I (PHY1027).

Current student supervision

- Ilya Starshinov (PhD, first supervisor)
- Harry Penketh (Phd, first supervisor)
- Carlota Riuz De Galarreta Fanjul (PhD, second supervisor)
- Angus Laurenson (PhD, second supervisor)
- Rosamund Herapath (PhD, second supervisor)

Alumni

- Tom Vettenburg (currently Lecturer at the University of Dundee, UK)

Book chapters

K. Vynck, J. Bertolotti, P. Barthelemy, and D.S. Wiersma, *Superdiffusion of light in Lévy glasses* in *Optical Properties of Photonic Structures: Interplay of Order and Disorder*, edited by Mikhail F. Limonov and Richard De La Rue (Taylor & Francis, 2012).

Publications in international refereed journals

- I I. Starshynov, A.M. Paniagua-Diaz, N. Fayard, A. Goetschy, R. Pierrat, R. Carminati, and J. Bertolotti, *Non-Gaussian Correlations between Reflected and Transmitted Intensity Patterns Emerging from Opaque Disordered Media*, Phys. Rev. X **8**, 021041 (2018).
- II M. Hofer, C. Soeller, S. Brasselet, and J. Bertolotti, *Wide field fluorescence epi-microscopy behind a scattering medium enabled by speckle correlations*, Optics Express **26**, 9866 (2018).
- III J. Bertolotti, *Designing disorder*, Nat. Phot. **12**, 59 (2018).
- IV C. Ruiz de Galarreta, A.M. Alexeev, Y.-Y. Au, M. Lopez-Garcia, M. Klemm, M. Cryan, J. Bertolotti, and C.D. Wright, *Nonvolatile reconfigurable phase-change metadevices for beam steering in the near infrared*, Adv. Func. Mat. **28**, 1704993 (2018).
- V W. Choi, C. Yin, I.R. Hooper, W.L. Barnes, and J. Bertolotti, *Absence of Anderson localization in certain random lattices*, Phys. Rev. E **96**, 022122 (2017).
- VI D. Akbulut, T. Strudley, J. Bertolotti, E.P.A.M. Bakkers, A. Lagendijk, O.L. Muskens, W.L. Vos, and Allard P. Mosk, "Optical transmission matrix as a probe of the photonic strength", Phys. Rev. A **94**, 043817 (2016).
- VII I. Starshinov, J. Bertolotti, J. Anders, *Quantum correlation of light scattered by disordered media*, Optics Express **5**, 4662 (2016).
- VIII J. Bertolotti, *Multiple scattering: Unravelling the tangle*, Nature Physics (2015).
- IX S. Schott, J. Bertolotti, J.-F. Léger, L. Bourdieu, S. Gigan, *Characterization of the angular memory effect of scattered light in biological tissues*, Optics Express **23**, 13505 (2015).
- X H. Yilmaz, E.G. van Putten, J. Bertolotti, A. Lagendijk, W.L. Vos, A.P. Mosk, *Speckle correlation resolution enhancement of wide-field fluorescence imaging*, Optica **2**, 424 (2015).
- XI J. Bertolotti, *Non-invasive imaging: Peeking through the curtain*, Nature Photonics **8**, 751 (2014).
- XII S.A. Goorden, J. Bertolotti, A.P. Mosk, *Superpixel-based spatial amplitude and phase modulation using a digital micromirror device*, Optics Express **22**, 17999 (2014).
- XIII J. Bertolotti, E.G. van Putten, C. Blum, A. Lagendijk, W.L. Vos, A.P. Mosk, *Non-invasive imaging through opaque scattering layers*, Nature **491**, 232 (2012).
(selected by PhysicsWorld as one of the "Top 10 breakthroughs for 2012")
- XIV M. Burrelli, V. Radhalakshmi, R. Savo, J. Bertolotti, K. Vynck, D.S. Wiersma, *Weak localization of light in superdiffusive random systems*, Phys. Rev. Lett. **108**, 110604 (2012).

- XV E.G. van Putten, D. Akbulut, J. Bertolotti, W.L. Vos, A. Lagendijk, A.P. Mosk, *Scattering Lens Resolves Sub-100 nm Structures with Visible Light*, Phys. Rev. Lett. **106**, 193905 (2011).
- XVI J. Bertolotti, K. Vynck, D.S. Wiersma, *Multiple scattering of light in superdiffusive media*, Phys. Rev. Lett. **105**, 163902 (2010).
- XVII P. Barthelemy, J. Bertolotti, K. Vynck, S. Lepri, D.S. Wiersma, *Role of quenching on superdiffusive transport in two-dimensional random media*, Phys. Rev. E **82**, 011101 (2010).
- XVIII J. Bertolotti, K. Vynck, L. Pattelli, P. Barthelemy, S. Lepri, D.S. Wiersma, *Engineering disorder in superdiffusive Lévy glasses*, Adv. Func. Mat. **20**, 965 (2010).
- XIX P.D. García, R. Sapienza, J. Bertolotti, M.D. Martín, Á. Blanco, A. Altube, L. Viña, D.S. Wiersma, C. López, *Resonant light transport through Mie modes in photonic glasses*, Phys. Rev A **78**, 023823 (2008).
- XX P. Barthelemy, J. Bertolotti, D.S. Wiersma, *A Lévy flight for light*, Nature **453**, 495 (2008).
- XXI R. Sapienza, P.D. García, J. Bertolotti, M.D. Martín, Á. Blanco, L. Viña, C. López, D.S. Wiersma, *Observation of Resonant Behavior in the Energy Velocity of Diffused Light*, Phys. Rev. Lett. **99**, 233902 (2007).
- XXII J. Bertolotti, M. Galli, R. Sapienza, M. Ghulinyan, S. Gottardo, L.C. Andreani, L. Pavesi, D.S. Wiersma, *Wave transport in random systems: Multiple resonance character of necklace modes and their statistical behavior*, Phys. Rev. E **74**, 035602 (2006).
- XXIII M. Ghulinyan, M. Galli, C. Toninelli, J. Bertolotti, S. Gottardo, F. Marabelli, D.S. Wiersma, L. Pavesi, L.C. Andreani, *Wide-band transmission of nondistorted slow waves in one-dimensional optical superlattices*, App. Phys. Lett. **88**, 241103 (2006).
- XXIV A.C. Arsenault, T.J. Clark, G. Von Freymann, L. Cademartiri, R. Sapienza, J. Bertolotti, E. Vekris, S. Wong, V. Kitaev, I. Manners, R.Z. Wang, S. John, D.S. Wiersma, G.A. Ozin, *From color fingerprinting to the control of photoluminescence in elastic photonic crystals*, Nature Mat. **5**, 179 (2006).
- XXV L. Cademartiri, J. Bertolotti, R. Sapienza, D.S. Wiersma, G. von Freymann, G.A. Ozin, *Multigram scale, solventless, and diffusion-controlled route to highly monodisperse PbS nanocrystals*, J. Phys. Chem. B **110**, 671 (2006).
- XXVI L. Cademartiri, G. von Freymann, A.C. Arsenault, J. Bertolotti, D.S. Wiersma, V. Kitaev, G.A. Ozin, *Nanocrystals as precursors for flexible functional films*, Small **1** 1184 (2005).
- XXVII J. Bertolotti, S. Gottardo, D.S. Wiersma, M. Ghulinyan, L. Pavesi, *Optical necklace states in Anderson localized 1D systems*, Phys. Rev. Lett. **94**, 113903 (2005).