

Curriculum Vitae

Jacopo Bertolotti

Name Jacopo Bertolotti

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Professional experience

March 2013 - present: 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

June 2008: Summer School *International School on Nanophotonic and Molecular Photonics*, Santander (Spain).

20 February 2008: PhD in Physics at the University of Florence (Italy) with

a thesis entitled “*Light transport beyond diffusion*”.

August 2005 Summer School *Photonic Metamaterials: From Micro to Nano Scale*, Erice (Italy).

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*”.

Funded projects

FIRB 2008 “Futuro in Ricerca”: *Anomalous transport of light in complex systems* (600 k€, principal investigator). Granted by the Italian Ministry of Education, University and Research (MIUR).

Talks and posters at International conferences

- MESA+ Colloquium, Enschede, The Netherlands, 2012 (invited talk).
- 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).
- Workshop “Light transport and nano-optics in random media,” King’s College, London, 2012 (invited talk).
- 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

- “ATLCS Kick-off meeting,” 11 Mar 2011, Florence (Italy).
- “Complex Nanophotonics Science Camp,” 27-30 August 2013, Cumberland Lodge (UK) *in preparation*

Invited seminars and lectures

- Looking through an opaque screen, 15 Nov 2012, ASML (The Netherlands)
- Imaging of a hidden object, 23 OCT 2012, University of Exeter (UK).
- Looking through an opaque screen, 20 AUG 2012, Yale University (USA).
- Anomalous transport of light, 02 FEB 2010, University of Twente (The Netherlands).
- Light transport in strongly scattering media: Anderson localization and the formation of Necklace states, 13 JAN 2010, Technical University of Denmark (Denmark).
- Light transport beyond diffusion, 16 DEC 2009, University of Twente (The Netherlands).
- Light superdiffusion in Lévy glasses, 10 APR 2009, Hugo Steinhaus Center (Poland).
- Light propagation in disordered systems: diffusion and beyond, 6 APR 2009, Wrocław University of Technology (Poland).
- Lévy flights (and walks) for light, 16 FEB 2009, University of Bologna (Italy).

Short visits

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

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

Referee activity

Nature

Optics Express

Optics Letters

Journal of the Optical Society of America A

Journal of the Optical Society of America B

Advanced Materials

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 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”)
- II 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).
- III 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).
- IV J. Bertolotti, K. Vynck, D.S. Wiersma, *Multiple scattering of light in superdiffusive media*, Phys. Rev. Lett. **105**, 163902 (2010).
- V 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).
- VI 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).
- VII 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).
- VIII P. Barthelemy, J. Bertolotti, D.S. Wiersma, *A Lévy flight for light*, Nature **453**, 495 (2008).
- IX 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).
- X 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).
- XI 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).

- XII 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).
- XIII 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).
- XIV 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).
- XV 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).