

Curriculum vitae – Gianluca Rastelli

First, Last Name Gianluca, Rastelli
Affiliation INO-CNR BEC Center and Dipartimento di Fisica, Università di Trento,
38123 Povo, Italy
E-mail gianluca.rastelli@ino.cnr.it

Scientific Background

Area Theoretical Condensed Matter Physics
Keywords Quantum Mesoscopic Physics, Quantum Transport, Nanomechanics, Quantum
Dissipative Systems

Research interests: quantum nanomechanics and engineered quantum systems as nanoelectronic devices, superconducting Josephson junction devices, quantum microwave photon devices and nanoelectromechanical systems.

Research Experience

From 10/2020 **CNR Researcher, INO BEC Center**, Trento, Italy.
04/2015-09/2020 **Zukunftskolleg Research Fellow, group leader**, University of Konstanz.
5-year position granted by the German Excellence Initiative.
03/2013–03/2015 **Marie Curie Incoming Fellowship**, University of Konstanz, Germany.
Post-doc fellow of Zukunftskolleg, 2-year position.
10/2012–02/2013 **Post-doc**, University of Konstanz, Germany.
09/2007–08/2012 **Post-doc**, LPMCM, CNRS Laboratory & University of Grenoble, France.
03/2006–04/2007 **Post-doc grant “Angelo Della Riccia”**, Institute Néel, CNRS, Grenoble, France.
11/2005–02/2006 **PhD Scholarship**, Institute for Complex Systems, CNR, Rome, Italy.
11/2002–10/2005 **PhD**, funded by the MIUR (Ministry of Education, University and Research), Italy.

Qualifications

04/07/2019 **Habilitation (France): HDR** (Habilitation à Diriger des Recherches),
Université Grenoble-Alpes, Grenoble, France.
Title: “Electro-vibration interaction in quantum dots and quantum dissipation in
Josephson systems”, <https://hal.archives-ouvertes.fr/tel-02196787>
08/02/2018 **Qualification in France:** Professeur des Universités, obtained on 08/02/2018.
N. 18128191693D (section 28, Condensed Matter).
15/02/2017 **Qualification in Germany:** junior research group leader (“Nachwuchsgruppenleiter”),
supervisor of PhD students.

Education

20/02/2006 **PhD in Physics**, University of L’Aquila, Italy.
Dissertation title: “Wigner Crystallization in polarizable and anisotropic systems”.
Assessment: excellent. Advisor: Prof. S. Ciuchi.
06/03/2002 **Master degree in Physics**, 110/110 cum laude (with distinction),
University of L’Aquila, Italy. Advisor: Prof. S. Ciuchi.

Grants and Fellowships

- 2016-2019 **DFG Research Grant** (German Research Foundation). Role: Principal investigator. Project: "Nonequilibrium transport and dynamics in conventional and topological superconducting junctions" (€ 190,000).
- 2016-2019 **Collaborative Research Center (SFB 767) Grant**. Role: Principal investigator. Project C3: "Time-dependent transport and correlations in electron nanostructures" (€ 370,000, 50%).
- 2015-2017 **MWK-RiSC Grant** (Research Seed Capital program). Role: Principal investigator. Project: "Many-body interaction and decoherence in superconducting Josephson Qubits" (€ 92,000).
- 2015 **Zukunftskolleg Research Fellowship**, 5-year position, Konstanz, Germany.
- 2013 **Marie-Curie Incoming Fellowship**, 2-year position, Konstanz, Germany.

Visiting scientist

- 10/02/2019
-01/03/2019 Victoria University, Wellington, New Zealand, collaboration with Prof. M. Governale.
- 10-20/06/2017 Michigan State University, U.S.A., collaboration with Prof. M. Dykman.
- 01-08/09/2015 University of Nottingham, U.K., collaboration with Prof. A. Armour.
- 12/10/2014
-10/11/2014 University of Yale, New Haven, U.S.A., collaboration with Prof. L. Glazman.
- 01/05/2007
-31/07/2007 Institute for Complex Systems, CNR, Rome, Italy, collaboration with Prof. L. Pietronero.

Invited talks at international conferences

- 19/11/2019 **Symposium Controlled Nanosystems 2019**, Konstanz, Germany.
Title: Circuit quantum electrodynamics in hybrid quantum dot systems.
- 17/07/2019 **Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT'19)**, Prague, Czech Republic.
Title: Decoherence of topological states in extended quantum Ising models.
- 12/02/2019 **International Advanced Materials and Nanotechnology**, AMN9, New Zealand.
Title: Electron-vibration and electron-photon interaction in nanoscale systems.
- 08/05/2018 **Quantum Thermodynamics and Transport**, Mainz, Germany.
Title: Quantum phase transition with dissipative frustration.
- 13/07/2017 **Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT'17)**, Prague, Czech Republic.
Title: Ground state cooling of a nanomechanical resonator by electron transport.
- 23/05/2017 **Spin Dynamics**, Conference, Jeju, South Korea.
Title: Spin-vibration interaction in a nanomechanical spin-valve.
- 05/02/2017 **Frontiers of Nanomechanical Systems (FNS'17)**, La Thuile, Italy.
Title: Cooling a nanomechanical resonator by electron transport in hybrid devices.
- 09/03/2016 **DPG Spring Meeting** (German Physical Society), Regensburg, Germany.
Title: Cooling a nanomechanical resonator by electron transport in hybrid devices.

Invited seminars and colloquia

29/10/2019	Physikalisch colloquium, University of Konstanz, Germany.
18/07/2019	University College Dublin, Ireland.
27/02/2019	Victoria University, Wellington, New Zealand.
15/01/2019	LPTM, University of Cergy-Pontoise, France.
21/11/2018	Scuola Normale Superiore - NEST, Pisa, Italy.
23/10/2018	Institut Néel, CNRS, Grenoble, France.
06/04/2018	LPCT laboratory, University of Lorraine, Nancy, France.
08/09/2017	Institut Néel, CNRS, Grenoble, France.
19/06/2017	Michigan State University, East Lansing, U.S.A.
09/12/2016	LPMMC laboratory, CNRS, Grenoble, France.
18/07/2016	KIT, Karlsruhe, Germany.
20/11/2015	University of Tübingen, Germany.
03/09/2015	University of Nottingham, U.K.
22/01/2015	Institut für Theoretische Physik, Ulm, Germany.
15/12/2014	University of Basel, Switzerland.
30/10/2014	University of Yale, New Haven, U.S.A.
17/04/2013	LPTMC laboratory, University UMPC Paris, France.
16/04/2013	LPS laboratory, University Paris Sud, France.
31/01/2013	Institut Jean Lamour, CNRS & University of Lorraine, Nancy, France.
09/04/2012	University of Konstanz, Germany.
12/03/2012	Laboratoire Pierre Aigrain, Paris, France.
08/03/2012	LPTHT Laboratory, Paris, France.
22/01/2012	Institut Jean Lamour, CNRS, University of Lorraine, Nancy, France.
22/11/2011	Institut Néel, CNRS, Nanoscience Foundation, Grenoble, France.
12/04/2011	Institut de Physique et Chimie de Materiaux, CNRS, Strasbourg, France.
04/02/2009	Max Planck Institute, Stuttgart, Germany.
21/01/2009	Physikzentrum RWTH, University of Aachen, Germany.
13/11/2008	University of Nottingham, U.K.
15/03/2007	DTU, Technical University of Denmark, Copenhagen, Denmark.
07/02/2007	LPMMC laboratory, CNRS, Grenoble, France.
23/11/2006	University of L'Aquila, Italy.
27/10/2006	LMMP laboratory, CNRS, Marseille, France.
19/09/2006	SISSA, Trieste, Italy.
20/12/2005	CASTI laboratory, INFN, CNR, L'Aquila, Italy.
02/11/2005	Institute for Complex Systems, CNR, Rome, Italy.

Referee, Reviewer and Physics Outreach

Referee for	Nature Physics, Physical Review X, Physical Review Letters, Applied Physics Letters, Physical Review B, Physical Review E, New Journal of Physics, Scientific Reports, Int. J. of Quantum Chemistry, Int. J. of Mod. Physics B, Applied Science.
Reviewer for grants	Icelandic Research Fund (IRF), Iceland.
09/2018-12/2019	Interdisciplinary project with the artist Sarah Bildstein "100 Spectra", University of Konstanz, Zukunftskolleg, Germany.
06/2015	Theater performance "Science/Stage: an Experiment Schrödinger's Stage", with Dr. Julia Boll, University of Konstanz, Zukunftskolleg, Germany.
05/2014	Public talk: "Discovering the Quantum World: latest advances in Quantum Mechanics", "Konstanzer Lange Nacht der Wissenschaft" (Night of Science), Konstanz, Germany.

Supervision

Principal supervisor – University of Konstanz, Germany.

Since 06/2017 **Phd Student** D. Maile
Since 11/2016 **Phd Student** M. Mantovani
2017/2018 **Master Student** H. Weisbrich
2016-2017 **Master Student** D. Maile
2016-2017 **Master Student** F. Hellbach
2015-2016 **Master Student** R. Kless

2017/2018 **Bachelor Student** D. Boneß
2016-2017 **Bachelor Student** J. Blessing
2015-2016 **Bachelor Student** D. Maile
2015-2016 **Bachelor Student** H. Weisbrich
2014-2015 **Bachelor Student** R. Kopp

Cosupervisor with Prof. W. Belzig – University of Konstanz.

Since 06/2018 **Phd Student** H. Weisbrich
Since 06/2018 **Phd Student** H. Zhan
Since 06/2017 **Phd Student** F. Hellbach
Since 11/2016 **Phd Student** R. Kless

2016-2017 **PhD Student** F. Xu, University of Konstanz, Germany, with Prof. W. Belzig.
2014-2016 **PhD Student** P. Stadler, University of Konstanz, Germany, with Prof. W. Belzig.

Cosupervisor (theory aspects) with Prof. E.M. Weig (experimentalist) – University of Konstanz.

Since 2018 **Phd Student** J. Huber
2018-2019 **Phd Student** K. Gajo

Cosupervisor (theory aspects) with Prof. E. Scheer (experimentalist) – University of Konstanz.

Since 2018 **Phd Student** F. Yang

Cosupervisor with Prof. F. Hekking – University of Grenoble, France.

2013-2014 **PhD Student** A. Di Marco.

Teaching (short overview)

Since 10/2012 **University of Konstanz**, Germany.
Lectures, responsible of tutorials, exercise sessions. Level: Bachelor, Master.

2010-2012 **University (J. Fourier) of Grenoble** (now Université Grenoble Alpes), France.
Lectures, laboratory and exercise sessions. Level: Bachelor.

2004-2006 **University of L'Aquila**, Italy.
Lectures and exercise sessions. Level: Bachelor, Master.