Pier Paolo Baruselli's Curriculum Vitae

Personal information

Surname / First name	**Dr. Baruselli Pier Paolo**
Address 1	Via Dossi, 2 25040 Braone (BS), Italy
Address 2	SISSA, Via Bonomea, 265 34136 Trieste (Italy)
Telephone (office)	+390403787448 Mobile +393299875875
E-mail	barusell@sissa.it, pierpaolobaruselli@libero.it
Websites	https://www.linkedin.com/in/pier-paolo-baruselli-7710b414a/ https://cm.sissa.it/people/members.php?ID=2450
Nationality	Italian
Date of birth	30/03/1984

Scientific Activity

Current Affiliation	PostDoc at SISSA
General Interests	Data science; machine learning; internet of things. Theoretical solid state physics. Strongly correlated materials; transport properties; topological properties; dissipation. Many-body theory; density functional theory; topological band structure.
Current scientific activity	Energy dissipation in the Kondo effect
Past scientific Activity	Topological Kondo insulators; SmB_6; quasiparticle interference, impurities in topological insulators; strong correlations in topological phases. Transport in magnetic nanocontacts. Joining DFT and many-body techniques to describe the Kondo effect from first principles (as a PhD student). Study of semiconductor nanostructures and their transport properties, focusing on superlattices (as an undergraduate student).
Informatics Abilities	Good knowledge of Fortran, Python (numpy, scipy, pandas, scikit-learn, keras), Jupyter, Bash and LaTeX. Basic notions of C, C++, R, SQL, Mathematica, MatLab, PowerBI, git and Libre Office. Github (https://github.com/baruselli) Plotly (https://plot.ly/~baruselli/) Arduino (https://thingspeak.com/channels/329109)

Education and training

Date	July 2017 Participant to "The CODATA-RDA Research Data Science Applied workshop on IoT/Big-Data Analytics"
Date	August 2016 Participant to "The CODATA-RDA School of Research Data Science"
Date	April 2016 – Present PostDoc at SISSA
Date	January 2013 – February 2016 PostDoc at the TU Dresden under the supervision of Prof. M. Vojta
Date	October, 29th 2012 PhD degree in "Theory and simulation of condensed matter" with thesis "Kondo conductance anomalies from first principles" under the supervision of Profs. M. Fabrizio and E. Tosatti
Date	From November 2008 to October 2012 PhD student at SISSA, Trieste.
Date	May, 19th 2009 *Diploma* at IUSS-SUS (Scuola Universitaria Superiore), with the thesis "Fotoni entangled: analisi

dell'evidenza sperimentale" ("Entangled photons: analysis of experimental evidences"), supervisor Prof. V. Degiorgio

Date | June, 29th 2008
Laurea Specialistica in Scienze Fisiche (second level degree in Physics) at Pavia University; thesis "Semiclassical analysis of electronic transport in semiconductor superlattices", supervisor Prof. L. C. Andreani, co-supervisor Prof. R. Ferreira; mark 110/110 con lode

Date | From September 2007 to June 2008
Guest student (*pensionnaire étranger*) at ENS, Paris

Date | July, 21st 2006
Laurea triennale in fisica (first level degree in Physics) at Pavia University; thesis "Sistemi superconduttivi e trasformazione di Bogoljubov-Valatin" ("Superconductive systems and Bogoljubov-Valatin transformation"), supervisor Prof. S. Boffi; mark 110/110 con lode

Date | From October 2003 to July 2008
Student at University of Pavia, Collegio Ghislieri and Scuola Universitaria Superiore, Pavia

Date | July 2003
*Maturità scientific*a (high school degree) at Liceo C. Golgi Breno (BS), mark 100/100

Languages

English: certification B2 French: certification A2

German: certification B2 Basics of Slovenian and Spanish

List of Publications

https://arxiv.org/find/all/1/all:+baruselli/0/1/0/all/0/1

1) P. P. Baruselli, M. Fabrizio, and E. Tosatti, Mechanical dissipation at a tip-induced Kondo onset, Phys. Rev. B 96, 075113 (2017).
2) R. Requist, P. P. Baruselli, A. Smogunov, M. Fabrizio, S. Modesti, and E. Tosatti, Metallic, Magnetic and Molecular Nanocontacts, Nature Nanotech. 11, 499-508 (2016)
3) P. P. Baruselli and M. Vojta, Cotunneling into a Kondo lattice with odd hybridization, Phys. Rev. B 93, 235111 (2016)
4) P. P. Baruselli and M. Vojta, Spin textures on general surfaces of the correlated topological insulator SmB6, Phys. Rev. B 93, 195117 (2016)
5) P. P. Baruselli and M. Vojta, Surface reconstruction in a tight-binding model for the topological Kondo insulator SmB6, 2D Materials 2, 044011 (2015)
6) P. P. Baruselli and M. Vojta, Distinct Topological Crystalline Phases in Models for the Strongly Correlated Topological Insulator $SmB6$, Phys. Rev. Lett. 115, 156404 (2015)
7) P. P. Baruselli, R. Requist, A. Smogunov, M. Fabrizio, and E. Tosatti, Co adatoms on Cu surfaces: Ballistic conductance and Kondo temperature, Phys. Rev. B 92, 045119 (2015)
8) P. P. Baruselli and M. Vojta, Scanning tunneling spectroscopy and surface quasiparticle interference in models for the strongly correlated topological insulators SmB6 and PuB6, Phys. Rev. B 90, 201106(R) (2014)
9) P. P. Baruselli and M. Vojta, Kondo holes in topological Kondo insulators: Spectral properties and surface quasiparticle interference, Phys. Rev. B 89, 205105 (2014)
10) R. Requist, S. Modesti, P. P. Baruselli, A. Smogunov, M. Fabrizio, and E. Tosatti, Kondo conductance across the smallest spin 1/2 radical molecule, PNAS 111, 69 (2014)
11) P. P. Baruselli, M. Fabrizio, A. Smogunov, R. Requist, and E. Tosatti, Magnetic impurities in nanotubes: From density functional theory to Kondo many-body effects, Phys. Rev. B 88, 245426 (2013)
12) P. P. Baruselli, R. Requist, M. Fabrizio, and E. Tosatti , Ferromagnetic Kondo Effect in a Triple Quantum Dot System Phys. Rev. Lett. 111, 047201 (2013)
13) P. P. Baruselli and M. Fabrizio, Sub-Ohmic two-level system representation of the Kondo effect, Phys. Rev. B 85, 073106 (2012)
14) P. P. Baruselli, A. Smogunov, M. Fabrizio, and E. Tosatti, Kondo Effect of Magnetic Impurities in Nanotubes, Phys. Rev. Lett. 108, 206807 (2012)
15) P. P. Baruselli, A. Smogunov, M. Fabrizio, and E. Tosatti, Kondo effect of magnetic impurities on nanotubes, Physica E: Low-dimensional Systems and Nanostructures (2012) 44, 1040 (2012)