

CURRICULUM VITAE

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Current position

Associate Professor at the **University of Milano Bicocca**, Physics Department.

Professional experience

2016-2017 Research Associate at the Theory Department of CERN
2008- **MIUR Associate Professor** (chiamata diretta) at the University of Milano Bicocca,
Physics Department
2005-2010 **Fixed-term staff member at CERN**, Theory Department
2004-2005 Research Associate at the Theory Department of CERN
2001-2008 **Permanent Researcher (CR1) at CNRS**, Section 02 - France
2001-2003 **Fellow at CERN**, Theory Department
1998-2001 Postdoc at Boston University, Physics Department

Education

1995-1998 Ph.D at Scuola Normale Superiore - Pisa
Thesis: Light Quark Masses and CP Violation in $K^0 - \bar{K}^0$
and $B^0 - \bar{B}^0$ mixing
Supervisor: Prof. Guido Martinelli
Grade: **70/70 cum laude**
1989-1995 Master degree at Università di Roma La Sapienza
Thesis: Lattice Gauge fixing: problems and methods
Supervisor: Prof. Massimo Testa
Grade: **110/110 cum laude**

Research experience

Author of 121 publications: 63 papers on peer-reviewed international journals and 58 proceedings at international conferences. Please see the list of publications for more details. More than 60 talks and seminars given at international conferences and universities.

Invited plenary talks at international conferences

- 2017 Lattice 2017 - University of Granada - Granada
Title: Multi-boson block factorization of fermions
- 2015 Lattice 2015 - RIKEN Advanced Institute for Computational Science - Kobe
Title: Recent progress on chiral symmetry breaking in QCD
- 2014 XI Int. Conf. on Quark Confinement and the Hadron Spectrum - St. Petersburg
Title: Mechanisms of chiral symmetry breaking in QCD: a lattice perspective
- 2008 VIII Quark confinement and the hadron spectrum - University of Mainz
Title: The Banks–Casher relation with Wilson fermions in two-flavour QCD
- 2006 Lattice 2006 - University of Tucson (AZ)
Title: Light dynamical fermions on the lattice: toward the chiral regime of QCD
- 2005 XXXXth Rencontres de Moriond - La Thuile
Title: Unquenched flavor physics with TeraFlop machines ?
- 2002 Lattice 2002 - MIT Cambridge (MA)
Title: Exact chiral symmetry on the lattice: QCD applications
- 1999 QCD 99 - University of Montpellier
Title: Weak matrix elements without quark masses on the lattice

Invited plenary talks at international workshops

- 2017 SIGN 2017: Sign Problem in QCD and Beyond - INT Seattle
Title: A local factorization of the fermion determinant in lattice gauge theories
- 2016 CERN TH Institute on emergent properties of space-time - CERN
Title: Non-perturbative definition of the energy-momentum tensor on the lattice
- 2015 XVI workshop on Statistical Mechanics and non Perturbative Field Theory - Bari
Title: Implications of Poincarè symmetry for thermal field theories
- 2015 Origin of Mass 2015 - Odense
Title: Implications of Poincaré symmetry for thermal field theories
- 2013 STRONGnet 2013 - Workshop - Graz
Title: Implications of Poincaré symmetry for thermal field theories
- 2012 New Horizons for Lattice Computations with Chiral Fermions - BNL Brookhaven
Title: Thermodynamic potentials from shifted boundary conditions
- 2011 Chiral dynamics with Wilson fermions - ECT* Trento
Title: Thermodynamic potentials from shifted boundary conditions
- 2009 2009 Taipei Workshop on Lattice QCD - Taiwan
Title: On the Banks–Casher relation with Wilson fermions
- 2009 QCD Green's Functions, Confinement and Phenomenology - ECT* Trento
Title: Chiral symmetry breaking and the Banks–Casher relation
- 2006 Lattice QCD simulations with light quarks - Max Planck Inst., Ringberg
Title: Lattice QCD with light quarks compares to chiral perturbation theory
- 2005 Chiral perturbation theory confronts lattice QCD - University of Valencia
Title: Low-energy constants of the $\Delta S = 1$ effective Hamiltonian from lattice QCD

- 2005 Perspectives in lattice QCD - Japan Soc. for Promotion of Science, Nara
Title: First results for two-flavor QCD with light quarks
- 2005 DESY Theory Workshop 2005 - Hamburg
Title: Unquenched flavor physics with TeraFlop machines ?
- 2004 Lattice QCD: present and future - University of Paris sud
Title: Flavor physics on the lattice with TFlop machines

Invited courses at international schools

- 2017 Three lectures at the CP^3 Origins Lattice Winter School - Odense
Title: Factorization of fermions
- 2017 Three lectures at the ICPT Summer School on Particle Physics - Trieste
Title: Broken symmetries and lattice gauge theory
- 2016 Ten lectures at the Galileo Galilei Institute for Theoretical Physics - Florence
Title: Quantum field theory beyond perturbation theory
- 2006 Two lectures at College de France - Paris
Title: Lattice QCD with Wilson and Ginsparg–Wilson fermions
- 2005 Two lectures for the Japan Soc. for Promotion of Science - Nara
Title: QCD applications for Ginsparg–Wilson fermions
- 2002 Two lectures at EU IHP workshop - University of Bern
Title: Chiral fermions and their phenomenological applications

Other invited talks

- 2009 Conference on computational physics 2009, Taiwan
Title: Exploiting symm. for exp. error reduction in path integral Monte Carlo
- 2006 Chiral Dynamics 2006 - Durham/Chapel Hill USA
Title: Lattice QCD simulations with two light dynamical (Wilson) quarks
- 2004 Conference on computational physics 2004, Genova
Title: Flavor physics with TFlop machines
- 2003 FIS - Parma
Title: Witten-Veneziano formula with GW fermions
- 2003 Europhysics Conference on High Energy Physics (HEP2003) - Aachen
Title: A lattice perspective of kaon phenomenology
- 2003 IFAE - Lecce
Title: Lattice Matrix Elements for unitarity triangle analysis
- 2001 LEPTRE - Rome
Title: Quark masses and weak MEs from the lattice

Teaching experience

2018 Title: Quantum field theory II
2018 Title: Numerical methods for theoretical physics
2016 Title: Quantum field theory I and II
Two full courses of 96 hours for master students at the
Physics Department of University of Milano Bicocca
2012-2015 Title: Numerical methods for theoretical physics
Full course of 96 hours for bachelor students at the
Physics Department of University of Milano Bicocca

- 2010-2015 Title: Advanced quantum mechanics
Full course of 64 hours for bachelor students at the
Physics Department of University of Milano Bicocca
- 2009-2011 Title: Numerical methods for theoretical physics
Full course of 90 hours for master students at the
Physics Department of University of Milano Bicocca

Supervision of postdocs

- 2017-2019 Dr. Tim Harris
Postdoctoral researcher at University of Milano Bicocca
- 2016-2018 Dr. Mattia Dalla Brida
Postdoctoral researcher at University of Milano Bicocca
- 2014-2016 Dr. Alejandro Vaquero
Postdoctoral researcher at University of Milano Bicocca
From October 2016 postdoc at University of Utah
- 2012-2014 Dr. Georg Engel
Postdoctoral researcher at University of Milano Bicocca
Now permanent researcher at AEE - Institute for Sustainable Technologies - Austria
- 2009-2010 Dr. Harvey Meyer
Fellow at CERN PH-TH
Now Associate Professor at University of Mainz.
- 2008-2010 Dr. Silvia Necco
Fellow at CERN PH-TH
Now secondary school teacher in Geneva.
- 2006-2008 Dr. Michele Della Morte
Fellow at CERN PH-TH
Now Associate Professor at University of Southern Denmark.
- 2004-2005 Dr. Silvia Necco
Postdoctoral researcher at CPT (CNRS) - Marseille

Supervision of students

- 2013-2016 Mr. Marco Cè
Ph.D student at Scuola Normale Superiore di Pisa
From October 2016 postdoc at University of Mainz
- 2013 Mr. Marco Cè
Master degree in Physics at University of Milano Bicocca
- 2013 Mr. Cristian Consonni
Master degree in Physics at University of Milano Bicocca
Now computer science PhD student at University of Trento
- 2001 Co-supervisor of Nazario Tantalò
Laurea degree in Physics at University of Rome La Sapienza
Now permanent researcher at University of Tor Vergata
- 1999-2001 Co-supervisor of Christian Höelbling
Ph.D in Physics at Boston University
Now permanent researcher at University of Wuppertal

Committees

- 2018- Member of the Ph.D school in Physics of Milano Bicocca
- 2016 Member of the International Advisory Committee of Lattice 2016
- 2015 Member of the International Advisory Committee of Lattice 2015
- 2012- Physics Department executive committee at University of Milano Bicocca
- 2008-2012 Science Faculty committee at University of Milano Bicocca
- 2006-2010 Fellow committee at CERN PH-TH
- 2005-2010 Staff committee at CERN PH-TH
- 1997-1998 Entry undergraduate committee at Scuola Normale Superiore - Pisa

Service to the community

- 2016- Referee for EPJA
- 2014 Ph.D thesis committee of Dr. Mattia Dalla Brida, Trinity College - Dublin
- 2005- Referee for JHEP
- 2004 Ph.D thesis committee of Dr. Nicolas Garron, CNRS - Marseille
- 2003- Referee for Nucl. Phys. and Phys. Lett.
- 1999- Referee for Phys. Rev. Lett. and Phys. Rev.

Organization of conferences and workshops

- 2014 VII Parma International School of Theoretical Physics
Title: Lectures on Lattice: Methods and Applications
- 2014 CERN TH-Institute
Title: Conceptual advances in lattice gauge theory
- 2010 CERN TH-Institute
Title: Future directions in lattice gauge theory
- 2005 Conference - Marseille
Title: Rencontre de physique des particules
- 2004 Workshop - Paris
Title: Lattice QCD: present and future
Coordinator of the Working Group on flavor physics

Funding ID

- 2016-2018 INFN special project
Title: High performance data network
Coordinator of the Milano Bicocca Unit. Total budget 13.5M Euros.
Budget for Bicocca Unit 450K Euros
- 2017-2019 INFN National Research Network
Title: New frontiers in lattice field theory for the Standard Model and beyond
PI and Coordinator of the project. Budget 100K Euros.
Computer time allocated by CINECA 180M core hours
(equivalent to approximately 1.8M Euros)
- 2014-2016 INFN National Research Network
Title: Strong interactions in the Standard Model and beyond and lattice field theory
PI and Coordinator of the project. Budget 170K Euros.
Computer time allocated by CINECA 200M core hours
(equivalent to approximately 2M Euros)

- 2013-2015 Progetto Premiale INFN
Title: SUMA
Coordinator of the Milano Bicocca Unit. Budget for Bicocca node 100K Euros
- 2012-2013 INFN National Research Network
Title: Strong interactions in the Standard Model and beyond and lattice field theory
PI and Coordinator of the project. Budget 130K Euros
- 2010-2011 CSCS Swiss National Supercomputing Center
Title: Numerical lattice gauge theory with a symmetry constrained Monte Carlo
PI and Coordinator of the project. Budget 15M core hours
(equivalent to approximatively 150K Euros)
- 2009-2012 MIUR National Research Network (PRIN 2009)
Title: Lattice Field Theory at the LHC Epoch
Coordinator of the Milano Bicocca Unit. Budget 84K Euros
- 2008 PC-cluster for Lattice QCD at CERN PH-TH Department
Co-PI, Budget 250K CHF